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Potential Solar Beam Irradiation on Slopes:

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Tables for 30° to 50° Latitude

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POTENTIAL SOLAR BEAM IRRADIATION ON SLOPES

Tables for 30° to 50° Latitude //

by

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POTENTIAL SOLAR BEAM IRRADIATION ON SLOPES

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Solar Energy Relations

Solar irradiation, the energy source to the hydrologic cycle, photosynthetic processes, and other natural phenomena, must be evaluated continually in diverse land management and research ventures. The establishment and protection of forests, and their yields of wood and water, are directly affected. Energy analyses for wild or agricultural lands invariably begin with data or assumptions relevant to the recurring input from the sun. In recent years this approach has emphasized the need for a quantitative description of such concepts as "southern exposure," "solar climate," or "topographic shading." Significant contributions have been those by Fons et al. (1960), Kaempfert and Morgen (1952), Loewe (1962), Milankovitch (1930), and Okanoue (1955).

The slope and orientation of terrain elements, especially important in forest hydrology, are important climatological factors as well. It is well known that the differential sunning of slopes alone can account for climatic extremes measurable in terms of equivalent latitudinal differences. The experienced forester recognizes the extent of such differences intuitively, and local management practices may reflect his artful tactics. Yet, scientific progress is facilitated to a greater extent by numerical qualification than by rules of thumb.

Solar beam irradiation is only one of several radiant energy components of importance in the radiation balance for natural areas, yet the differences between areas are often largely a function of this one parameter. Fairly uniform climatic changes with latitude are obviously recognizable and related directly to sun angle. This relationship has been confirmed from long-term measurements of the various

components of radiation exchange. The typical relation is:

$$S = J + H + G - R - A \quad (1)$$

where S is the net radiation balance, J the direct beam, H the diffuse sky, G the thermal atmospheric, R the reflected, and A the thermal terrestrial components. Data from two middle-latitude stations show that long-term averages of the additional terms H, G, R and A are largely self-canceling:

Station		$(H + G) \div (R + A)$
Davos, Switzerland	1959	0.961
Hamburg, Germany	1957-62	1.036

Just as ordinary climatological data are not adequate to describe day-to-day events meteorologically, direct-beam irradiation alone cannot describe a short-term radiation budget. Conversely, it is expected that mean values for this parameter will be as useful as mean temperature and precipitation values.

Radiation detectors and integrators are being used more widely with increasing acceptance of the usefulness of solar radiation values. This equipment is not used widely enough, however, to be a tool in the general classification of forest sites, empirical-theoretical radiation indexes have been evolved to meet such needs. Solar radiation values computed from the solar constant, an atmospheric attenuation constant (turbidity factor), and the geometry of a site with respect to the sun's rays, provide remarkably good long-term means. The kinds of parameters that change from day to day (clouds, smog, dust, and atmospheric moisture) make short-term forecasts much more uncertain.

A purely theoretical parameter--*potential solar beam irradiation*--is obtained by neglecting entirely the turbidity factor mentioned above (the influence of the atmosphere in depleting direct solar energy). The intensity on a surface is then proportional to the cosine of the angle of incidence. The incidence angle for a terrestrial surface depends in turn on the five independent variables: terrestrial latitude, hour angle (time of day), solar declination (time of year), surface inclination or steepness, and surface orientation (azimuth of slope).

Although potential solar beam irradiation usually differs appreciably from actual irradiation, it is an appropriate, if nonrigorous, basis for comparing the energy flux among the facets of a landscape. In addition, it may be considered as a permanent site factor, the only variation being a perfectly cyclical one and calculable. The tables that form the bulk of this report are the result of such calculations. They provide a means of (1) quantitatively distinguishing, in terms of potential insolation, between surfaces that differ as to latitude, slope inclination, and orientation, and (2) assessing the potential insolation received on selected dates by a specific surface, which facilitates seasonal comparisons. The tables give the potential solar beam irradiation in Langleys received during 1 solar day, and the sunrise-sunset times as hours before and after true solar noon for 24 dates during the year. Latitudes 30° and 50° North are covered by 2° increments. Slope inclinations from 0 to 100 percent by 10-percent increments, and slope orientation to 16 points of the compass are covered. For inclined surfaces the latitude and change in longitude needed to locate the equivalent slope, or horizontal surface parallel to the inclined surface, are tabulated. The total potential insolation received during 1 year, and a radiation index (R.I.) based on the annual values, are given for all surfaces.

Equations

The mathematical theory underlying computations of potential or extraterrestrial radiation was developed by Milankovitch (1930) in his classical "Mathematische Klimalehre." In somewhat altered symbolism, the instantaneous irradiation I_s of a horizontal surface is given as:

$$I_s = \frac{I_0}{e^2} (\sin \theta \cdot \sin \delta + \cos \theta \cdot \cos \delta \cdot \cos wt) \quad (2)$$

where:

I_0 = solar constant
 e = radius vector, ratio of the

earth-sun distance at a particular time to its mean

θ = terrestrial latitude

δ = solar declination

w = angular velocity of the earth's rotation, 15 degrees per hour

t = time in hours from noon

The time of sunrise and sunset (t_1 , negative and t_2 , positive) is found by setting $I_s = 0$ and solving for t , or

$$\cos wt = -\tan \theta \cdot \tan \delta \quad (3)$$

By integration of equation 2, the total radiant energy for the period of 1 solar day, I_q is found as

$$I_q = \frac{I_0}{e^2} (2t \cdot \sin \theta \cdot \sin \delta + \frac{1}{w} \cdot \cos \theta \cdot \cos \delta \cdot 2 \cdot \sin wt) \quad (4)$$

To account for the inclination and orientation of sloping surfaces, Okanoue (1957) included the additional arguments, k = slope inclination, and h = slope azimuth. Slope inclination, azimuth, and latitude are used to compute θ' and α as follows:

$$\theta' = \sin^{-1} (\sin k \cdot \cos h \cdot \cos \theta + \cos k \cdot \sin \theta) \quad (5)$$

$$\alpha = \tan^{-1} \left[\frac{(\sin h \cdot \sin k) \div (\cos k \cdot \cos \theta - \cos h \cdot \sin k \cdot \sin \theta)}{\sin \theta} \right] \quad (6)$$

These locate the equivalent slope (Lee 1962) which is the horizontal surface parallel to the inclined surface. The latitude of the equivalent slope is given by θ' . A negative θ' indicated an equivalent latitude south of the equator. The change in longitude (or hour angle) between the slope and its parallel horizontal surface is given by α . Okanoue's modification of equation 2 with reference to the idea of an equivalent slope becomes:

$$I_s = \frac{I_0}{e^2} (\sin \theta' \cdot \sin \delta + \cos \theta' \cdot \cos \delta \cdot \cos wt') \quad (7)$$

where $wt' = wt + \alpha$. Sunrise and sunset times for slopes are given by:

$$\cos wt' = -\tan \theta' \cdot \tan \delta \quad (8)$$

where it is understood that equation 3 continues as the limiting case (i.e., day-length on a horizontal surface is the maximum for a given latitude; the inclined plane may have a shorter, but never a longer, solar day than the horizon-

Table 1.--Input Data

Latitude o	Slope direction	Slope inclination			Solar declination		Dates, approx.	e ²	Io/e ²
		Deg.	Min.	Percent	Deg.	Min.			
30 00		0	00	0	+ 23	30	6/22	1.03297	1.93616
32 00	N	5	43	10	+ 21	58	6/1 7/12	1.03090	1.94005
34 00	NNE-NNW	11	19	20	+ 19	20	5/18 7/27	1.02728	1.94689
36 00	NE-NW	16	42	30	+ 15	35	5/3 8/10	1.02190	1.95714
38 00	ENE-WNW	21	48	40	+ 10	55	4/19 8/25	1.01528	1.96990
40 00	E-W	26	34	50	+ 5	38	4/4 9/9	1.00739	1.98553
42 00	ESE-WSW	30	58	60	0	00	3/21 9/23	0.99960	2.00080
44 00	SE-SW	35	00	70	- 5	38	3/7 10/8	0.99154	2.01706
46 00	SSE-SSW	38	40	80	- 10	55	2/20 10/22	0.98404	2.03243
48 00	S	41	59	90	- 15	35	2/7 11/5	0.97790	2.04520
50 00		45	00	100	- 19	20	1/24 11/19	0.97285	2.05582
					- 21	58	1/10 12/3	0.96938	2.06317
					- 23	30	12/22	0.96759	2.06699

Values for the Radius Vector e interpolated after List (1958).

tal facet at the same latitude). In certain instances double solar days may occur--both sunrise and sunset occur twice for the slope during one rotation period (24 hours). A common example is the north wall of a building in summer at a latitude (North) exceeding the declination in degrees.

Over the time period of a day or less, the total potential slope irradiation, I_q , is derived from the relation:

$$I_q = \frac{I_0}{e^2} \left[(t_2 - t_1) \sin \theta' \cdot \sin \delta + \frac{12}{\pi} \cdot \cos \theta' \cdot \cos \delta \cdot (\sin \omega t_2' - \sin \omega t_1') \right] \quad (9)$$

where $\frac{12}{\pi}$ is $\frac{1}{\omega}$ in radians.

Explanation of Tables

A Fortran program for the IBM 1620 computer, incorporating equations 3, 4, 5, 6, 8, and 9, was used to obtain the tabulated values. Inputs for this program were the Io/e^2 values and the sine, cosine, and tangent (where necessary) of the latitudes, slopes, aspects, and declinations listed in table 1. The latitudes (30° to 50° North) include most of the conterminous United States, excluding only southern Texas and Louisiana, and most of Florida. While the potential insolation values listed apply equally to slope aspects symmetric with respect to a north-south axis (NNE-NNW, E-W, etc.) the sunrise and sunset times are for slopes with east-facing components only. Sunrise and sunset

times on west-facing slopes are the reverse of those on east-facing slopes and, of course, their signs are reversed. In addition, the values of α for east-facing slopes are to the east, while for west-facing slopes the indicated longitude change is to the west.

Interpretation of the tables for latitudes in the southern hemisphere³ is straightforward if minor differences in season lengths are ignored. Slope aspects are reversed; there is a 180° rotation of the north-south axis (N=S, NNE=SSW, etc.). The sign of the solar declination is reversed, and the date changes by approximately 6 months. Users of the tables can find corresponding dates in the southern hemisphere by inspection in table 1. There the corresponding date for the southern hemisphere is found by entering the table at the solar declination equivalent in value but opposite in sign to that for the date in the northern hemisphere. Sunrise and sunset times are given for southern hemisphere slopes with east-facing components, just as for the northern hemisphere.

True solar time was used exclusively in the computations. True solar time is reckoned as the number of hours before (-) or after (+) solar noon--the moment the geometric center of the sun crosses the meridian (longitude) of the observer. Likewise, for our purposes, the sun rises and sets when its geometric center

³Little land area is included between 30° and 50° South Latitude--approximately the southern third of South America, southern Australia and New Zealand, and a very small part of South Africa.

crosses the horizon. Sample calculations for converting the true solar times of sunrise and sunset used in the tables to local standard times are given in the appendix.

The 13 solar declinations were chosen according to the approximate relation:

$$\delta = 23.5 \sin N \quad (10)$$

where N is the number of days to the nearest equinox. Each quarter year is assumed to contain 90 days, and solutions to equation 10 can be arranged to yield declinations representative of approximately equal numbers of days. Except for the solstice dates (June 22 and December 22) each declination is represented by two dates as shown in table 1.

The radius vector e varies seasonally, and is used as a correction for the solar constant to account for the varying earth-sun distance. Neglect of this correction introduces an error equal to the range of variation of solar energy outside the atmosphere, or about 6.7 percent. The fact that e is not a simple function of declination δ presents a minor complication. The procedure used was to take an arithmetic average of e for the 2 days represented by a single declination. The error involved in this approximation is less than one percent.

Solutions to equations 5 and 6, representing the latitudes and changes in longitude of parallel horizontal surfaces, are given in the tables for each slope-aspect combination. These will be interesting in a geographic sense, because they indicate to some degree the relative change in solar climate to be expected.

Annual radiation totals based on a 365-day year, not 365.24 days, expressed in thousands Langleys (kg-cal/cm^2) are derived by weighting each of the daily totals according to the number of days for which each is representative. The R.I.'s for each slope are the ratios of annual radiation totals to the annual maximum potential solar beam irradiation. Since the mean day length at any latitude is 12 hours, the maximum potential insolation for the year is the solar constant times the duration of sunshine for the year:

$$2.0 \cdot 365 \cdot 12 \cdot 60 = 525,600 \text{ Langleys.}$$

The indexes are directly comparable for all surfaces regardless of latitude.

The R.I.'s, purely theoretical quantities, have application possibilities in forestry, ecology, and climatology as relative measures of the solar climate for sites. Land classification systems can well afford this elementary additional measure of the topoclimate. The indexes can also be used for more refined empirical-theoretical evaluations, as when experience permits the assignment of a mean turbidity factor to a locality for a day, season or year.

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*Address requests for copies to the originating office.

Appendix: Sample Calculations

Local standard time is based on a *mean solar time* for 15° longitudinal zones; Eastern Standard Time, for example, is 75th Meridian time. The mean solar time for a locality is earlier (or later) than local standard time by 4 minutes per degree of longitude measured east (or west) to the time zone meridian. Thus, mean solar time at Pittsburgh (80° West) is 20 minutes earlier than Eastern Standard Time; at New York City (74° West) it is 4 minutes later.

True solar time at a site differs from mean solar time through the approximate range, -14 minutes to +16 minutes as shown in table 2. This difference is commonly referred to as the Equation of Time. From table 2, true solar noon on May 3rd occurs 3.1 minutes before mean solar noon. To complete the example for Pittsburgh, the sun actually crosses the 80th meridian on May 3rd at 20.0 - 3.1 = 16.9 minutes after noon, or at about 12:17 p.m. Eastern Standard Time. And on February 7th, true solar noon at New York City occurs at -4 + 14.2 = 10.2 minutes after noon, or at 12:10 EST.

Table 2.--Equation of Time, After List (1958)
(Subtract Equation of Time from true solar time to obtain mean solar time).

Date	Equation of Time	
	Min.	Hrs.
Jan 10	- 7.2	-0.12
24	-12.0	-0.20
Feb 7	-14.2	-0.24
20	-13.9	-0.23
Mar 7	-11.3	-0.19
21	- 7.5	-0.13
Apr 4	- 3.3	-0.05
19	+ 0.5	+0.01
May 3	+ 3.1	+0.05
18	+ 3.7	+0.06
June 1	+ 2.4	+0.04
22	- 1.6	-0.03
July 12	- 5.4	-0.09
27	- 6.4	-0.11
Aug 10	- 5.4	-0.09
25	- 2.3	-0.04
Sept 9	+ 2.4	+0.04
23	+ 7.3	+0.12
Oct 8	+12.1	+0.20
22	+15.3	+0.26
Nov 5	+16.4	+0.27
19	+14.7	+0.25
Dec 3	+10.5	+0.17
22	+ 1.8	+0.03

In this way, any of the sunrise and sunset times in the tables can be adjusted to local standard time. For example:

(a) The solar day for a 40 percent east-facing slope at Grand Canyon, Arizona (36° North, 112° West), on December 22nd begins at -4.77 hours and ends at +3.15 hours. The corresponding Mountain Standard (105° Meridian) Times are found as follows:

True solar times -4.77 hrs. and +3.15 hrs.
Mean solar times -4.80 hrs. and +3.12 hrs.
are earlier by
0.03 hr. (table 2)

Mountain Standard -4.33 hrs. and +3.59 hrs.
Times are later by
112° - 105° = 7°,
or 7/15 hr. (0.47)

Mountain Standard 7:40 a.m. and 3:35 p.m.
Time

(b) For a 40 percent west-facing slope at Grand Canyon on December 22nd, the solar day would begin at -3.15 hours and end at +4.77 hours. The corresponding Mountain Standard Times are found as follows:

True solar times -3.15 hrs. and +4.77 hrs.
Mean solar times -3.18 hrs. and +4.74 hrs.
are earlier by
0.03 hr. (table 2)

Mountain Standard -2.71 hrs. and +5.21 hrs.
Times are later by
112° - 105° = 7°,
or 7/15 hr. (0.47)

Mountain Standard 9:17 a.m. and 5:13 p.m.
Time

(c) Sunrise and sunset March 21st on a horizontal surface at Fort Collins, Colorado (40° North, 105° West) occur at -6.00 and +6.00 hours true solar time. The longitude coincides with the standard time zone meridian, so that the only correction required is the Equation of Time.

True solar times -6.00 hrs. and +6.00 hrs.

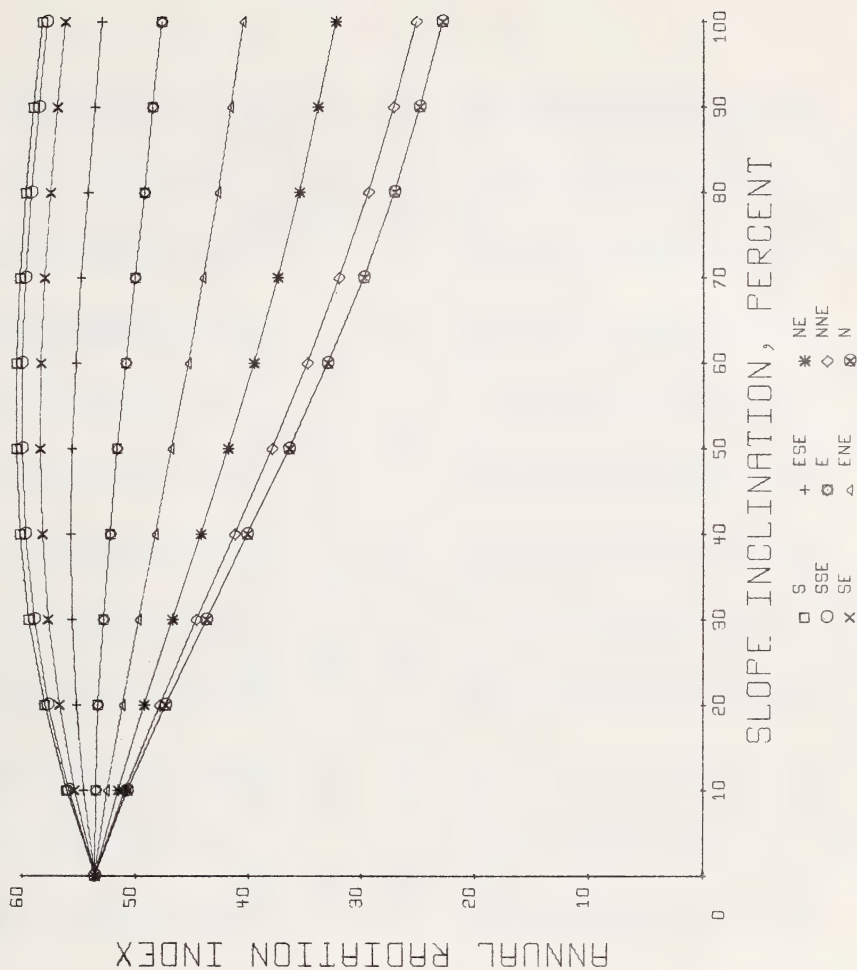
Mean solar times -5.87 hrs. and +6.13 hrs.
are later by 0.13
hr. (table 2)

Mountain Standard 6:08 a.m. and 6:08 p.m.
Time

List of symbols

THETA	Equivalent latitude in degrees--the terrestrial latitude where a horizontal surface parallel or "equivalent" to the inclined surface is found.
ALPHA	Change in longitude in degrees--the difference in longitude between the location of the inclined surface and its "equivalent" horizontal surface. Alpha is to the east for aspects with an east component, and to the west for aspects with a west component.
SR SS	The elapsed time in hours from true solar noon at which the geometric center of the solar disc crosses the horizon.
LY	Total potential insolation in Langleys (gram calories/cm ²) received by the surface during the solar day on the given date.
YEAR	Total annual potential insolation in thousands of Langleys (kilogram calories/cm ²) received by the surface.
R.I.	Radiation index--the ratio of the total annual potential insolation to the maximum potential insolation at the site.

RADIATION INDEXES FOR VARIOUS FACETS AT LATITUDE 30 N



HORIZONTAL SURFACE

LATITUDE 30 N

	SR	SS	LY
JUN 22	-6.97	6.97	1005.1
JUN 1 JUL 12	-6.90	6.90	994.9
MAY 18 JUL 27	-6.78	6.78	976.3
MAY 3 AUG 10	-6.62	6.62	947.3
APR 19 AUG 25	-6.43	6.43	906.9
APR 4 SEP 9	-6.22	6.22	855.7
MAR 21 SEP 23	-6.00	6.00	794.2
MAR 7 OCT 8	-5.78	5.78	726.8
FEB 20 OCT 22	-5.57	5.57	658.5
FEB 7 NOV 5	-5.38	5.38	594.4
JAN 23 NOV 19	-5.22	5.22	540.9
JAN 10 DEC 3	-5.10	5.10	502.4
DEC 22	-5.03	5.03	479.6

YEAR R.I.
282.118 5368

LATITUDE 30 N
ASPECT N -

		SLOPE				20 PCT				30 PCT				40 PCT				50 PCT			
		10 PCT				THETA		ALPHA		THETA		ALPHA		THETA		ALPHA		THETA		ALPHA	
		THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA		
		35.7	0.0	41.3	0.0	46.7	0.0	51.8	0.0	56.6	0.0	61.7	0.0	66.7	0.0	71.7	0.0	76.8	0.0		
		SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY		
JUN 22		-6.97	6.97	1016.6	-6.97	6.97	1018.0	-6.97	6.97	1010.2	-6.97	6.97	994.6	-6.97	6.97	972.9	-6.97	6.97	951.2		
JUN 1 JUL 12		-6.90	6.90	1001.8	-6.90	6.90	999.0	-6.90	6.90	987.2	-6.90	6.90	968.0	-6.90	6.90	943.2	-6.90	6.90	918.4		
MAY 18 JUL 27		-6.78	6.78	975.6	-6.78	6.78	965.5	-6.78	6.78	947.1	-6.78	6.78	922.0	-6.78	6.78	891.9	-6.78	6.78	861.7		
MAY 3 AUG 10		-6.62	6.62	936.2	-6.62	6.62	916.2	-6.62	6.62	888.8	-6.62	6.62	855.5	-6.62	6.62	818.3	-6.62	6.62	781.0		
APR 19 AUG 25		-6.43	6.43	883.3	-6.43	6.43	851.7	-6.43	6.43	813.6	-6.43	6.43	770.3	-6.43	6.43	725.5	-6.43	6.43	681.2		
APR 4 SEP 9		-6.22	6.22	819.0	-6.22	6.22	775.1	-6.22	6.22	725.9	-6.22	6.22	673.4	-6.22	6.22	619.5	-6.22	6.22	565.0		
MAR 21 SEP 23		-6.00	6.00	744.6	-6.00	6.00	688.8	-6.00	6.00	629.0	-6.00	6.00	567.1	-6.00	6.00	505.3	-6.00	6.00	443.4		
MAR 7 OCT 8		-5.73	5.73	665.7	-5.67	5.67	599.5	-5.60	5.60	530.7	-5.52	5.52	461.4	-5.43	5.43	393.6	-5.34	5.34	325.8		
FEB 20 OCT 22		-5.47	5.47	588.1	-5.35	5.35	514.0	-5.21	5.21	438.8	-5.05	5.05	365.0	-4.87	4.87	294.4	-4.69	4.69	222.8		
FEB 7 NOV 5		-5.23	5.23	517.0	-5.05	5.05	437.5	-4.85	4.85	358.7	-4.62	4.62	283.0	-4.33	4.33	212.5	-4.04	4.04	140.9		
JAN 23 NOV 19		-5.03	5.03	459.0	-4.80	4.80	376.3	-4.54	4.54	296.0	-4.23	4.23	220.4	-3.86	3.86	151.9	-3.49	3.49	82.9		
JAN 10 DEC 3		-4.88	4.88	417.8	-4.62	4.62	333.7	-4.31	4.31	253.1	-3.94	3.94	178.6	-3.57	3.57	112.9	-3.20	3.20	49.9		
DEC 22		-4.79	4.79	393.8	-4.50	4.50	309.1	-4.17	4.17	228.6	-3.76	3.76	155.3	-3.35	3.35	91.7	-2.94	2.94	27.7		
		YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.		
		266.526	.5071	248.949	.4736	230.131	.4378	210.819	.4011	191.753	.3648	173.617	.3303	157.014	.2987	142.899	.2719	131.083	.2494		

NOTE - FOR ASPECTS WITH WEST COMPONENTS, THE TIME AND SIGN OF SR AND SS ARE REVERSED.

LATITUDE 30 N
ASPECT S -

	10 PCT				20 PCT				SLOPE				30 PCT				40 PCT				50 PCT			
	THETA		ALPHA		THETA		ALPHA		THETA		ALPHA		THETA		ALPHA		THETA		ALPHA		THETA		ALPHA	
	SR	SS	LY	LY	SR	SS	LY	LY	SR	SS	LY	LY	SR	SS	LY	LY	SR	SS	LY	LY	SR	SS	LY	LY
JUN 22	-6.75	6.75	984.8		-6.56	6.56	957.4		-6.39	6.39	924.1		-6.24	6.24	886.4		-6.10	6.10	846.0		-6.00	6.00	815.5	
JUN 1 JUL 12	-6.70	6.70	979.1		-6.52	6.52	955.9		-6.36	6.36	926.4		-6.22	6.22	892.2		-6.09	6.09	854.7		-6.00	6.00	824.2	
MAY 18 JUL 27	-6.61	6.61	968.0		-6.45	6.45	952.0		-6.32	6.32	929.1		-6.19	6.19	900.7		-6.08	6.08	868.5		-6.00	6.00	838.4	
MAY 3 AUG 10	-6.48	6.48	949.6		-6.36	6.36	943.5		-6.25	6.25	929.8		-6.15	6.15	910.0		-6.06	6.06	885.3		-6.00	6.00	855.1	
APR 19 AUG 25	-6.33	6.33	921.7		-6.25	6.25	921.7		-6.17	6.17	925.5		-6.11	6.11	916.2		-6.04	6.04	901.1		-6.00	6.00	881.4	
APR 4 SEP 9	-6.17	6.17	884.0		-6.13	6.13	903.3		-6.09	6.09	913.8		-6.05	6.05	916.5		-6.02	6.02	912.4		-6.00	6.00	912.4	
MAR 21 SEP 23	-6.00	6.00	836.0		-6.00	6.00	868.8		-6.00	6.00	892.5		-6.00	6.00	907.7		-6.00	6.00	915.5		-6.00	6.00	915.5	
MAR 7 OCT 8	-5.78	5.78	780.8		-5.78	5.78	826.2		-5.78	5.78	862.4		-5.78	5.78	889.6		-5.78	5.78	908.7		-5.78	5.78	908.7	
FEB 20 OCT 22	-5.57	5.57	722.7		-5.57	5.57	778.7		-5.57	5.57	825.4		-5.57	5.57	863.0		-5.57	5.57	892.0		-5.57	5.57	892.0	
FEB 7 NOV 5	-5.38	5.38	666.4		-5.38	5.38	730.6		-5.38	5.38	785.7		-5.38	5.38	831.5		-5.38	5.38	868.4		-5.38	5.38	868.4	
JAN 23 NOV 19	-5.22	5.22	618.3		-5.22	5.22	688.3		-5.22	5.22	749.3		-5.22	5.22	801.0		-5.22	5.22	843.7		-5.22	5.22	843.7	
JAN 10 DEC 3	-5.10	5.10	583.1		-5.10	5.10	656.6		-5.10	5.10	721.3		-5.10	5.10	776.8		-5.10	5.10	823.1		-5.10	5.10	823.1	
DEC 22	-5.03	5.03	562.0		-5.03	5.03	637.3		-5.03	5.03	704.0		-5.03	5.03	761.5		-5.03	5.03	809.7		-5.03	5.03	809.7	
JUN 22	-5.97	5.97	804.4		-5.85	5.85	762.9		-5.75	5.75	722.6		-5.65	5.65	684.1		-5.55	5.55	647.6		-5.55	5.55	647.6	
JUN 1 JUL 12	-5.97	5.97	815.8		-5.87	5.87	776.5		-5.77	5.77	738.1		-5.67	5.67	701.2		-5.59	5.59	666.0		-5.59	5.59	666.0	
MAY 18 JUL 27	-5.98	5.98	834.1		-5.86	5.86	798.8		-5.80	5.80	763.7		-5.72	5.72	729.6		-5.64	5.64	696.9		-5.64	5.64	696.9	
MAY 3 AUG 10	-5.98	5.98	857.6		-5.91	5.91	828.1		-5.84	5.84	798.0		-5.77	5.77	768.2		-5.71	5.71	739.0		-5.71	5.71	739.0	
APR 19 AUG 25	-5.99	5.99	881.9		-5.94	5.94	859.9		-5.89	5.89	836.4		-5.84	5.84	812.2		-5.80	5.80	788.0		-5.80	5.80	788.0	
APR 4 SEP 9	-5.99	5.99	903.1		-5.97	5.97	890.0		-5.94	5.94	874.2		-5.92	5.92	856.9		-5.90	5.90	838.7		-5.90	5.90	838.7	
MAR 21 SEP 23	-6.00	6.00	917.0		-6.00	6.00	913.6		-6.00	6.00	906.6		-6.00	6.00	897.1		-6.00	6.00	885.8		-6.00	6.00	885.8	
MAR 7 OCT 8	-5.78	5.78	920.8		-5.78	5.78	927.1		-5.78	5.78	928.8		-5.78	5.78	927.1		-5.78	5.78	922.9		-5.78	5.78	922.9	
FEB 20 OCT 22	-5.57	5.57	913.3		-5.57	5.57	937.5		-5.57	5.57	937.5		-5.57	5.57	942.7		-5.57	5.57	944.7		-5.57	5.57	944.7	
FEB 7 NOV 5	-5.38	5.38	897.1		-5.38	5.38	918.7		-5.38	5.38	934.5		-5.38	5.38	945.5		-5.38	5.38	952.7		-5.38	5.38	952.7	
JAN 23 NOV 19	-5.22	5.22	877.8		-5.22	5.22	904.6		-5.22	5.22	925.1		-5.22	5.22	940.3		-5.22	5.22	951.4		-5.22	5.22	951.4	
JAN 10 DEC 3	-5.10	5.10	860.8		-5.10	5.10	890.9		-5.10	5.10	914.4		-5.10	5.10	932.4		-5.10	5.10	946.2		-5.10	5.10	946.2	
DEC 22	-5.03	5.03	849.3		-5.03	5.03	881.2		-5.03	5.03	906.4		-5.03	5.03	926.0		-5.03	5.03	941.2		-5.03	5.03	941.2	

YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.
318.341	*6057	316.635	*6024	313.785	*5970	310.152	*5901	305.988	*5822																

NOTE - FOR ASPECTS WITH WEST COMPONENTS, THE TIME AND SIGN OF SR AND SS ARE REVERSED.

LATITUDE 30 N
ASPECT NNE - NNW

		SLOPE																						
		10 PCT			20 PCT			30 PCT			40 PCT			50 PCT										
		THETA	ALPHA	LY	THETA	ALPHA	LY	THETA	ALPHA	LY	THETA	ALPHA	LY	THETA	ALPHA	LY								
		35.3	2.7	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY						
JUN 22		-6.97	6.97	1015.3	-6.97	6.97	1015.5	-6.97	6.97	1006.6	-6.97	6.97	989.9	-6.97	6.97	967.3	-6.97	6.97	939.1					
JUN 1 JUL 12		-6.90	6.90	1000.9	-6.90	6.90	997.2	-6.90	6.90	984.6	-6.90	6.90	964.7	-6.90	6.90	939.1	-6.90	6.90	909.5					
MAY 18 JUL 27		-6.78	6.78	975.3	-6.78	6.78	964.9	-6.78	6.78	946.2	-6.78	6.78	920.8	-6.78	6.78	890.5	-6.78	6.78	859.5					
MAY 3 AUG 10		-6.62	6.58	936.7	-6.62	6.54	917.2	-6.62	6.49	890.3	-6.62	6.43	857.7	-6.62	6.36	821.0	-6.62	6.36	782.0					
APR 19 AUG 25		-6.43	6.34	884.8	-6.43	6.25	854.9	-6.43	6.15	818.6	-6.43	6.03	777.9	-6.43	5.89	734.5	-6.43	5.89	694.5					
APR 4 SEP 9		-6.22	6.09	821.7	-6.22	5.94	780.8	-6.22	5.78	735.1	-6.22	5.60	686.4	-6.22	5.39	636.7	-6.22	5.39	596.7					
MAR 21 SEP 23		-6.00	5.82	748.5	-6.00	5.62	697.4	-6.00	5.40	642.9	-6.00	5.16	587.3	-6.00	4.88	532.5	-6.00	4.88	492.5					
MAR 7 OCT 8		-5.78	5.56	670.7	-5.78	5.30	610.6	-5.78	5.02	549.1	-5.78	4.71	488.1	-5.78	4.37	429.8	-5.78	4.37	390.8					
FEB 20 OCT 22		-5.57	5.30	593.9	-5.57	4.99	526.9	-5.57	4.66	460.1	-5.57	4.28	395.8	-5.57	3.87	335.7	-5.57	3.87	296.7					
FEB 7 NOV 5		-5.38	5.06	523.4	-5.38	4.71	451.6	-5.38	4.32	381.6	-5.38	3.88	315.6	-5.38	3.40	255.5	-5.38	3.40	216.5					
JAN 23 NOV 19		-5.22	4.86	465.7	-5.22	4.47	390.9	-5.22	4.03	319.3	-5.22	3.53	253.0	-5.22	2.99	194.0	-5.22	2.99	155.0					
JAN 10 DEC 3		-5.07	4.72	424.7	-5.04	4.29	348.4	-5.00	3.81	276.3	-4.96	3.27	210.6	-4.91	2.67	153.0	-4.91	2.67	114.0					
DEC 22		-4.99	4.63	400.7	-4.93	4.18	323.8	-4.87	3.67	251.7	-4.80	3.11	186.6	-4.71	2.47	130.3	-4.71	2.47	91.3					
		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.						
		267.736	.5094		251.591	.4787		234.400	.4460		216.868	.4126		199.670	.3799		183.370	.3489						
		SLOPE																						
		60 PCT			70 PCT			80 PCT			90 PCT			100 PCT										
		THETA	ALPHA	LY	THETA	ALPHA	LY	THETA	ALPHA	LY	THETA	ALPHA	LY	THETA	ALPHA	LY								
		57.2	21.3	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY						
JUN 22		-6.97	6.97	940.4	-6.97	6.97	910.9	-6.97	6.97	880.2	-6.97	6.97	849.3	-6.97	6.97	818.7	-6.97	6.97	788.7					
JUN 1 JUL 12		-6.90	6.90	909.8	-6.90	6.90	878.2	-6.90	6.90	845.6	-6.90	6.90	813.2	-6.90	6.90	781.4	-6.90	6.90	751.4					
MAY 18 JUL 27		-6.78	6.78	857.0	-6.78	6.78	821.9	-6.78	6.78	786.4	-6.78	6.77	751.5	-6.78	6.77	717.6	-6.78	6.77	687.6					
MAY 3 AUG 10		-6.62	6.29	782.3	-6.62	6.20	742.8	-6.62	6.09	703.8	-6.62	5.97	666.2	-6.62	5.81	630.2	-6.62	5.81	599.2					
APR 19 AUG 25		-6.43	5.74	690.3	-6.43	5.56	646.5	-6.43	5.37	604.5	-6.43	5.14	564.9	-6.43	4.89	527.8	-6.43	4.89	497.8					
APR 4 SEP 9		-6.22	5.17	587.7	-6.22	4.91	540.7	-6.22	4.63	496.6	-6.22	4.32	456.2	-6.22	3.99	419.3	-6.22	3.99	389.3					
MAR 21 SEP 23		-6.00	4.58	480.0	-6.00	4.25	431.1	-6.00	3.89	386.5	-6.00	3.51	346.7	-6.00	3.10	311.5	-6.00	3.10	281.5					
MAR 7 OCT 8		-5.78	3.99	375.5	-5.78	3.58	326.3	-5.78	3.15	282.9	-5.78	2.69	245.2	-5.78	2.22	213.0	-5.78	2.22	183.0					
FEB 20 OCT 22		-5.57	3.42	281.4	-5.57	2.93	233.6	-5.57	2.41	192.7	-5.57	1.87	158.5	-5.57	1.32	130.4	-5.57	1.32	100.4					
FEB 7 NOV 5		-5.38	2.87	202.6	-5.38	2.30	157.5	-5.38	1.69	120.2	-5.38	1.05	90.5	-5.38	.39	67.4	-5.38	.39	37.4					
JAN 23 NOV 19		-5.22	2.38	143.3	-5.22	1.72	101.4	-5.22	1.00	68.3	-5.22	.24	43.4	-5.22	-.57	25.5	-5.22	-.57	0.5					
JAN 10 DEC 3		-4.84	2.00	104.7	-4.75	1.25	66.1	-4.64	.42	37.0	-4.48	-.51	16.8	-4.20	-1.59	4.5	-4.20	-1.59	0.5					
DEC 22		-4.59	1.75	83.9	-4.44	.94	47.8	-4.23	.01	21.8	-3.67	-1.12	5.6	0.00	0.00	0.0	0.00	0.00	0.0					
		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.						
		183.370	.3489		168.339	.3203		154.847	.2946		143.001	.2721		132.740	.2525		122.500	.2325						

NOTE - FOR ASPECTS WITH WEST COMPONENTS, THE TIME AND SIGN OF SR AND SS ARE REVERSED.

LATITUDE 30 N
ASPECT SSE - SSW

	10 PCT						20 PCT						SLOPE						30 PCT						40 PCT						50 PCT					
	THETA			ALPHA			THETA			ALPHA			THETA			ALPHA			THETA			ALPHA			THETA			ALPHA			THETA			ALPHA		
	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY
JUN 22	-6.93	6.61	986.5	-6.89	6.28	961.7	-6.86	5.99	931.6	-6.83	5.73	897.5	-6.81	5.71	902.3	-6.80	5.48	868.6	-6.80	5.48	868.6	-6.80	5.48	868.6	-6.80	5.48	868.6	-6.80	5.48	868.6	-6.80	5.48	868.6	-6.80	5.48	868.6
JUN 1 JUL 12	-6.87	6.55	980.5	-6.85	6.24	959.6	-6.83	5.96	934.1	-6.81	5.71	902.3	-6.81	5.71	902.3	-6.80	5.48	868.6	-6.80	5.48	868.6	-6.80	5.48	868.6	-6.80	5.48	868.6	-6.80	5.48	868.6	-6.80	5.48	868.6	-6.80	5.48	868.6
MAY 18 JUL 27	-6.78	6.46	968.9	-6.78	6.17	954.7	-6.78	5.91	934.4	-6.78	5.71	902.3	-6.78	5.71	902.3	-6.78	5.48	868.6	-6.78	5.48	868.6	-6.78	5.48	868.6	-6.78	5.48	868.6	-6.78	5.48	868.6	-6.78	5.48	868.6	-6.78	5.48	868.6
MAY 3 AUG 10	-6.62	6.33	949.7	-6.62	6.07	944.8	-6.62	5.84	933.2	-6.62	5.63	916.0	-6.62	5.63	916.0	-6.62	5.40	894.5	-6.62	5.40	894.5	-6.62	5.40	894.5	-6.62	5.40	894.5	-6.62	5.40	894.5	-6.62	5.40	894.5	-6.62	5.40	894.5
APR 19 AUG 25	-6.43	6.18	920.8	-6.43	5.96	927.1	-6.43	5.75	926.0	-6.43	5.57	918.5	-6.43	5.57	918.5	-6.43	5.34	896.0	-6.43	5.34	896.0	-6.43	5.34	896.0	-6.43	5.34	896.0	-6.43	5.34	896.0	-6.43	5.34	896.0	-6.43	5.34	896.0
APR 4 SEP 9	-6.22	6.01	882.1	-6.22	5.83	900.4	-6.22	5.66	910.8	-6.22	5.51	914.0	-6.22	5.51	914.0	-6.22	5.28	891.5	-6.22	5.28	891.5	-6.22	5.28	891.5	-6.22	5.28	891.5	-6.22	5.28	891.5	-6.22	5.28	891.5	-6.22	5.28	891.5
MAR 21 SEP 23	-6.00	5.84	832.8	-6.00	5.70	863.3	-6.00	5.57	885.3	-6.00	5.45	899.5	-6.00	5.45	899.5	-6.00	5.22	880.0	-6.00	5.22	880.0	-6.00	5.22	880.0	-6.00	5.22	880.0	-6.00	5.22	880.0	-6.00	5.22	880.0	-6.00	5.22	880.0
MAR 7 OCT 8	-5.78	5.67	776.6	-5.78	5.56	818.3	-5.78	5.47	851.2	-5.78	5.38	875.7	-5.78	5.38	875.7	-5.78	5.15	856.2	-5.78	5.15	856.2	-5.78	5.15	856.2	-5.78	5.15	856.2	-5.78	5.15	856.2	-5.78	5.15	856.2	-5.78	5.15	856.2
FEB 20 OCT 22	-5.57	5.50	717.7	-5.57	5.43	768.8	-5.57	5.38	811.2	-5.57	5.32	844.9	-5.57	5.32	844.9	-5.57	5.09	829.3	-5.57	5.09	829.3	-5.57	5.09	829.3	-5.57	5.09	829.3	-5.57	5.09	829.3	-5.57	5.09	829.3	-5.57	5.09	829.3
FEB 7 NOV 5	-5.38	5.35	660.7	-5.38	5.32	719.4	-5.38	5.29	769.3	-5.38	5.27	810.4	-5.38	5.27	810.4	-5.38	5.04	785.8	-5.38	5.04	785.8	-5.38	5.04	785.8	-5.38	5.04	785.8	-5.38	5.04	785.8	-5.38	5.04	785.8	-5.38	5.04	785.8
JAN 23 NOV 19	-5.22	5.22	612.2	-5.22	5.22	676.3	-5.22	5.22	731.7	-5.22	5.22	788.3	-5.22	5.22	788.3	-5.22	5.01	763.3	-5.22	5.01	763.3	-5.22	5.01	763.3	-5.22	5.01	763.3	-5.22	5.01	763.3	-5.22	5.01	763.3	-5.22	5.01	763.3
JAN 10 DEC 3	-5.10	5.10	576.8	-5.10	5.10	644.1	-5.10	5.10	703.1	-5.10	5.10	753.2	-5.10	5.10	753.2	-5.10	4.89	728.7	-5.10	4.89	728.7	-5.10	4.89	728.7	-5.10	4.89	728.7	-5.10	4.89	728.7	-5.10	4.89	728.7	-5.10	4.89	728.7
DEC 22	-5.03	5.03	555.5	-5.03	5.03	624.6	-5.03	5.03	685.4	-5.03	5.03	737.4	-5.03	5.03	737.4	-5.03	4.82	712.9	-5.03	4.82	712.9	-5.03	4.82	712.9	-5.03	4.82	712.9	-5.03	4.82	712.9	-5.03	4.82	712.9	-5.03	4.82	712.9
JUN 22	-6.79	5.27	823.2	-6.76	5.07	785.6	-6.74	4.89	749.0	-6.73	4.72	714.1	-6.73	4.72	714.1	-6.73	4.49	689.5	-6.73	4.49	689.5	-6.73	4.49	689.5	-6.73	4.49	689.5	-6.73	4.49	689.5	-6.73	4.49	689.5	-6.73	4.49	689.5
JUN 1 JUL 12	-6.78	5.27	833.5	-6.77	5.08	798.1	-6.76	4.90	763.3	-6.75	4.74	730.0	-6.75	4.74	730.0	-6.75	4.51	699.0	-6.75	4.51	699.0	-6.75	4.51	699.0	-6.75	4.51	699.0	-6.75	4.51	699.0	-6.75	4.51	699.0	-6.75	4.51	699.0
MAY 18 JUL 27	-6.78	5.27	849.9	-6.78	5.09	818.3	-6.78	4.92	783.8	-6.78	4.76	750.0	-6.78	4.76	750.0	-6.78	4.53	719.5	-6.78	4.53	719.5	-6.78	4.53	719.5	-6.78	4.53	719.5	-6.78	4.53	719.5	-6.78	4.53	719.5	-6.78	4.53	719.5
MAY 3 AUG 10	-6.62	5.26	870.1	-6.62	5.10	844.0	-6.62	4.95	817.3	-6.62	4.82	790.9	-6.62	4.82	790.9	-6.62	4.59	761.4	-6.62	4.59	761.4	-6.62	4.59	761.4	-6.62	4.59	761.4	-6.62	4.59	761.4	-6.62	4.59	761.4	-6.62	4.59	761.4
APR 19 AUG 25	-6.43	5.26	889.3	-6.43	5.12	870.1	-6.43	4.99	849.4	-6.43	4.88	828.1	-6.43	4.88	828.1	-6.43	4.65	798.6	-6.43	4.65	798.6	-6.43	4.65	798.6	-6.43	4.65	798.6	-6.43	4.65	798.6	-6.43	4.65	798.6	-6.43	4.65	798.6
APR 4 SEP 9	-6.22	5.25	903.3	-6.22	5.14	891.8	-6.22	5.03	878.0	-6.22	4.93	862.6	-6.22	4.93	862.6	-6.22	4.70	832.1	-6.22	4.70	832.1	-6.22	4.70	832.1	-6.22	4.70	832.1	-6.22	4.70	832.1	-6.22	4.70	832.1	-6.22	4.70	832.1
MAR 21 SEP 23	-6.00	5.24	908.0	-6.00	5.15	904.8	-6.00	5.07	898.2	-6.00	5.00	889.3	-6.00	5.00	889.3	-6.00	4.77	859.8	-6.00	4.77	859.8	-6.00	4.77	859.8	-6.00	4.77	859.8	-6.00	4.77	859.8	-6.00	4.77	859.8	-6.00	4.77	859.8
MAR 7 OCT 8	-5.78	5.24	902.8	-5.78	5.17	907.7	-5.78	5.11	908.3	-5.78	5.06	905.7	-5.78	5.06	905.7	-5.78	4.83	876.2	-5.78	4.83	876.2	-5.78	4.83	876.2	-5.78	4.83	876.2	-5.78	4.83	876.2	-5.78	4.83	876.2	-5.78	4.83	876.2
FEB 20 OCT 22	-5.57	5.23	888.6	-5.57	5.19	900.8	-5.57	5.15	899.3	-5.57	5.12	897.8	-5.57	5.12	897.8	-5.57	4.89	868.3	-5.57	4.89	868.3	-5.57	4.89	868.3	-5.57	4.89	868.3	-5.57	4.89	868.3	-5.57	4.89	868.3	-5.57	4.89	868.3
FEB 7 NOV 5	-5.38	5.22	868.0	-5.38	5.21	886.4	-5.38	5.22	886.8	-5.38	5.22	899.3	-5.38	5.22	899.3	-5.38	5.01	870.3	-5.38	5.01	870.3	-5.38	5.01	870.3	-5.38	5.01	870.3	-5.38	5.01	870.3	-5.38	5.01	870.3	-5.38	5.01	870.3
JAN 23 NOV 19	-5.22	5.22	846.3	-5.22	5.22	869.5	-5.22	5.22	886.8	-5.22	5.22	899.3	-5.22	5.22	899.3	-5.22	5.01	870.3	-5.22	5.01	870.3	-5.22	5.01	870.3	-5.22	5.01	870.3	-5.22	5.01	870.3	-5.22	5.01	870.3	-5.22	5.01	870.3
JAN 10 DEC 3	-5.10	5.10	828.0	-5.10	5.10	854.4	-5.10	5.10	874.6	-5.10	5.10	889.9	-5.10	5.10	889.9	-5.10	4.89	860.4	-5.10	4.89	860.4	-5.10	4.89	860.4	-5.10	4.89	860.4	-5.10	4.89	860.4	-5.10	4.89	860.4	-5.10	4.89	860.4
DEC 22	-5.03	5.03	816.0	-5.03	5.03	844.0	-5.03	5.03	865.9	-5.03	5.03	882.7	-5.03	5.03	882.7	-5.03	4.82	853.2	-5.03	4.82	853.2	-5.03	4.82	853.2	-5.03	4.82	853.2	-5.03	4.82	853.2	-5.03	4.82	853.2	-5.03	4.82	853.2

NOTE - FOR ASPECTS WITH WEST COMPONENTS, THE TIME AND SIGN OF SR AND SS ARE REVERSED.

LATITUDE 30 N
ASPECT NE - N

	SLOPE						50 PCT								
	10 PCT			20 PCT			30 PCT			40 PCT			50 PCT		
	THETA	ALPHA		THETA	ALPHA		THETA	ALPHA		THETA	ALPHA		THETA	ALPHA	
	34.0	4.9		37.6	10.1		40.9	15.6		43.8	21.3		46.1	27.2	
	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY
JUN 22	-6.97	6.81	1012.0	-6.97	6.63	1009.7	-6.97	6.44	999.0	-6.97	6.22	981.6	-6.97	5.98	959.2
JUN 1 JUL 12	-6.90	6.73	998.7	-6.90	6.55	993.5	-6.90	6.32	980.4	-6.90	6.09	961.0	-6.90	5.84	937.0
MAY 18 JUL 27	-6.78	6.59	974.8	-6.78	6.37	964.9	-6.78	6.14	947.8	-6.78	5.89	925.0	-6.78	5.62	898.4
MAY 3 AUG 10	-6.62	6.40	938.6	-6.62	6.15	922.4	-6.62	5.89	899.8	-6.62	5.61	872.7	-6.62	5.31	842.8
APR 19 AUG 25	-6.43	6.17	889.7	-6.43	5.90	866.0	-6.43	5.60	837.3	-6.43	5.29	805.4	-6.43	4.96	771.9
APR 4 SEP 9	-6.22	5.93	829.6	-6.22	5.62	798.2	-6.22	5.29	763.4	-6.22	4.94	726.7	-6.22	4.58	690.0
MAR 21 SEP 23	-6.00	5.68	759.4	-6.00	5.33	720.8	-6.00	4.96	680.3	-6.00	4.58	639.7	-6.00	4.19	600.4
MAR 7 OCT 8	-5.78	5.42	684.2	-5.78	5.04	639.4	-5.78	4.63	594.4	-5.78	4.22	550.7	-5.78	3.80	509.9
FEB 20 OCT 22	-5.57	5.18	609.6	-5.57	4.76	560.0	-5.57	4.32	511.7	-5.57	3.87	466.2	-5.57	3.42	428.8
FEB 7 NOV 5	-5.38	4.95	540.7	-5.38	4.50	487.8	-5.38	4.03	437.5	-5.38	3.55	391.4	-5.38	3.06	350.3
JAN 23 NOV 19	-5.22	4.76	484.1	-5.22	4.28	429.2	-5.22	3.78	378.0	-5.22	3.27	331.9	-5.22	2.76	291.6
JAN 10 DEC 3	-5.10	4.62	443.8	-5.10	4.12	387.8	-5.10	3.60	336.4	-5.10	3.06	290.7	-5.10	2.53	251.4
DEC 22	-5.03	4.54	420.1	-5.03	4.02	363.7	-5.03	3.48	312.3	-5.03	2.94	267.0	-5.03	2.40	228.3
	YEAR	R.i.e.		YEAR	R.i.e.		YEAR	R.i.e.		YEAR	R.i.e.		YEAR	R.i.e.	
	271.126	.5158		258.854	.4925		245.894	.4678		232.802	.4429		220.074	.4187	
	60 PCT			70 PCT			80 PCT			90 PCT			100 PCT		
	THETA	ALPHA		THETA	ALPHA		THETA	ALPHA		THETA	ALPHA		THETA	ALPHA	
	48.1	33.0		49.5	38.7		50.6	44.1		51.4	49.3		51.9	54.1	
	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY
JUN 22	-6.97	5.73	933.6	-6.97	5.46	906.4	-6.97	5.19	878.8	-6.97	4.91	851.9	-6.97	4.64	826.0
JUN 1 JUL 12	-6.90	5.58	910.2	-6.90	5.30	882.1	-6.90	5.02	854.0	-6.90	4.74	826.7	-6.90	4.46	800.7
MAY 18 JUL 27	-6.78	5.33	869.7	-6.78	5.04	840.3	-6.78	4.74	811.4	-6.78	4.45	783.7	-6.78	4.17	757.5
MAY 3 AUG 10	-6.62	5.01	811.7	-6.62	4.69	780.7	-6.62	4.38	750.9	-6.62	4.08	722.9	-6.62	3.78	696.8
APR 19 AUG 25	-6.43	4.63	738.4	-6.43	4.29	706.0	-6.43	3.96	675.5	-6.43	3.65	647.4	-6.43	3.34	621.7
APR 4 SEP 9	-6.22	4.22	654.5	-6.22	3.86	621.1	-6.22	3.52	590.4	-6.22	3.19	562.7	-6.22	2.88	537.8
MAR 21 SEP 23	-6.00	3.80	563.6	-6.00	3.42	529.9	-6.00	3.06	499.7	-6.00	2.72	473.0	-6.00	2.40	449.3
MAR 7 OCT 8	-5.78	3.38	472.6	-5.78	2.98	439.4	-5.78	2.60	410.3	-5.78	2.24	385.1	-5.78	1.91	363.2
FEB 20 OCT 22	-5.57	2.97	388.0	-5.57	2.55	356.0	-5.57	2.15	328.6	-5.57	1.78	305.3	-5.57	1.45	285.5
FEB 7 NOV 5	-5.38	2.60	314.6	-5.38	2.15	284.3	-5.38	1.73	258.8	-5.38	1.35	237.7	-5.38	1.01	220.0
JAN 23 NOV 19	-5.22	2.27	257.4	-5.22	1.80	228.8	-5.22	1.37	205.4	-5.22	.98	186.2	-5.22	.63	170.5
JAN 10 DEC 3	-5.10	2.02	218.4	-5.10	1.54	191.4	-5.10	1.09	169.5	-5.10	.69	151.9	-5.10	.33	137.8
DEC 22	-5.03	1.87	196.3	-5.03	1.38	170.2	-5.03	.92	149.4	-5.03	.52	132.8	-5.03	.15	119.6

NOTE - FOR ASPECTS WITH WEST COMPONENTS, THE TIME AND SIGN OF SR AND SS ARE REVERSED.

LATITUDE 30 N
ASPECT SE - SW

		SLOPE												50 PCT			
		10 PCT			20 PCT			30 PCT			40 PCT			50 PCT			
		THETA	ALPHA		THETA	ALPHA		THETA	ALPHA		THETA	ALPHA		THETA	ALPHA		
		25.9	4.5		21.7	8.6		17.6	12.3		13.7	15.7		10.0	18.7		
		SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	
JUN 22		-6.97	6.51	991.0	-6.97	6.09	972.3	-6.97	5.71	949.5	-6.97	5.36	923.7	-6.97	5.04	895.8	
JUN 1	JUL 12	-6.90	6.45	984.0	-6.90	6.04	968.3	-6.90	5.67	948.4	-6.90	5.33	925.1	-6.90	5.02	899.4	
MAY 18	JUL 27	-6.78	6.35	970.8	-6.78	5.96	960.2	-6.78	5.61	945.1	-6.78	5.28	926.1	-6.78	4.99	904.3	
MAY 3	AUG 10	-6.62	6.22	945.3	-6.62	5.85	945.8	-6.62	5.52	937.3	-6.62	5.21	924.3	-6.62	4.94	907.9	
APR 19	AUG 25	-6.43	6.06	917.7	-6.43	5.72	922.7	-6.43	5.41	922.2	-6.43	5.13	916.5	-6.43	4.88	906.7	
APR 4	SEP 9	-6.22	5.88	876.0	-6.22	5.58	890.2	-6.22	5.30	898.3	-6.22	5.05	900.6	-6.22	4.82	898.1	
MAR 21	SEP 23	-6.00	5.70	823.8	-6.00	5.43	847.2	-6.00	5.18	864.0	-6.00	4.95	874.4	-6.00	4.75	879.3	
MAR 7	OCT 8	-5.78	5.52	764.9	-5.78	5.28	796.7	-5.78	5.06	821.5	-5.78	4.86	839.6	-5.78	4.69	851.6	
FEB 20	OCT 22	-5.57	5.34	703.7	-5.57	5.13	742.6	-5.57	4.94	774.3	-5.57	4.77	799.1	-5.57	4.62	817.2	
FEB 7	NOV 5	-5.38	5.18	645.0	-5.38	5.00	689.4	-5.38	4.84	726.6	-5.38	4.69	756.7	-5.38	4.56	779.9	
JAN 23	NOV 19	-5.22	5.05	595.3	-5.22	4.89	643.5	-5.22	4.75	684.8	-5.22	4.63	718.7	-5.22	4.52	745.7	
JAN 10	DEC 3	-5.10	4.95	559.1	-5.10	4.81	609.7	-5.10	4.69	653.4	-5.10	4.58	689.9	-5.10	4.48	719.4	
DEC 22		-5.03	4.89	537.4	-5.03	4.76	589.4	-5.03	4.65	634.4	-5.03	4.55	672.2	-5.03	4.46	703.0	
		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.		
		291.321	.5543		298.424	.5678		303.331	.5771		306.156	.5825		307.142	.5844		
		SLOPE												100 PCT			
		60 PCT			70 PCT			80 PCT			90 PCT			100 PCT			
		THETA	ALPHA		THETA	ALPHA		THETA	ALPHA		THETA	ALPHA		THETA	ALPHA		
		6.5	21.5		3.3	24.0		.4	26.2		-2.2	28.3		-4.6	30.1		
		SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	
JUN 22		-6.97	4.76	866.9	-6.97	4.50	837.8	-6.97	4.26	809.5	-6.97	4.05	782.3	-6.97	3.86	756.3	
JUN 1	JUL 12	-6.90	4.74	872.5	-6.90	4.49	845.2	-6.90	4.26	818.3	-6.90	4.06	792.3	-6.90	3.87	767.4	
MAY 18	JUL 27	-6.78	4.72	880.7	-6.78	4.48	856.3	-6.78	4.26	831.9	-6.78	4.07	808.0	-6.78	3.89	785.0	
MAY 3	AUG 10	-6.62	4.69	889.1	-6.62	4.46	868.8	-6.62	4.26	848.0	-6.62	4.08	827.2	-6.62	3.91	806.7	
APR 19	AUG 25	-6.43	4.65	893.7	-6.43	4.44	878.6	-6.43	4.26	862.2	-6.43	4.09	845.2	-6.43	3.93	828.0	
APR 4	SEP 9	-6.22	4.61	891.6	-6.22	4.42	882.1	-6.22	4.25	870.7	-6.22	4.10	858.0	-6.22	3.96	844.7	
MAR 21	SEP 23	-6.00	4.57	879.5	-6.00	4.40	876.1	-6.00	4.25	869.9	-6.00	4.12	861.9	-6.00	3.99	852.5	
MAR 7	OCT 8	-5.78	4.52	858.2	-5.78	4.38	860.6	-5.78	4.25	859.6	-5.78	4.13	856.1	-5.78	4.02	850.8	
FEB 20	OCT 22	-5.57	4.48	829.6	-5.57	4.36	837.1	-5.57	4.25	840.8	-5.57	4.14	841.6	-5.57	4.05	840.0	
FEB 7	NOV 5	-5.38	4.45	797.0	-5.38	4.34	809.0	-5.38	4.24	816.6	-5.38	4.16	820.9	-5.38	4.08	822.7	
JAN 23	NOV 19	-5.22	4.41	766.4	-5.22	4.32	781.6	-5.22	4.24	792.4	-5.22	4.17	799.4	-5.22	4.10	803.7	
JAN 10	DEC 3	-5.10	4.39	742.4	-5.10	4.31	759.8	-5.10	4.24	772.6	-5.10	4.18	781.5	-5.10	4.12	787.5	
DEC 22		-5.03	4.38	727.3	-5.03	4.30	746.0	-5.03	4.24	759.9	-5.03	4.18	769.9	-5.03	4.13	776.9	
		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.		
		306.610	.5834		304.899	.5801		302.331	.5752		299.186	.5692		295.856	.5625		

NOTE - FOR ASPECTS WITH WEST COMPONENTS, THE TIME AND SIGN OF SR AND SS ARE REVERSED.

LATITUDE 30 N
ASPECT ENE - MW

		10 PCT				20 PCT				SLOPE				30 PCT				40 PCT				50 PCT						
		THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY		
		32.0	6.2				33.7	12.6				35.0	18.9				36.0	25.1				36.5	31.0					
		YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	
		276.045	.5252	269.057	.5119	261.507	.4975	253.722	.4827	245.985	.4680																	
		60 PCT	70 PCT	80 PCT	90 PCT	100 PCT																						
		THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	
		36.8	36.4	36.8	41.5	36.7	46.0	36.4	50.2	36.4	50.2	36.4	50.2	36.4	50.2	36.4	50.2	36.4	50.2	36.4	50.2	36.4	50.2	36.4	50.2	36.4	50.2	
		SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY
JUN 22		-6.97	4.84	938.1	-6.97	4.50	916.9	-6.97	4.19	895.8	-6.97	3.90	875.4	-6.97	3.64	855.8	-6.97	3.39	836.3	-6.97	3.14	816.8	-6.97	2.89	797.3	-6.97	2.64	777.8
JUN 1	JUL 12	-6.90	4.74	922.4	-6.90	4.41	901.1	-6.90	4.10	880.0	-6.90	3.81	859.7	-6.90	3.55	840.3	-6.90	3.30	820.8	-6.90	3.05	801.3	-6.90	2.80	781.8	-6.90	2.55	762.3
MAY 18	JUL 27	-6.78	4.59	894.8	-6.78	4.25	873.3	-6.78	3.94	852.3	-6.78	3.66	832.2	-6.78	3.40	812.7	-6.78	3.15	793.2	-6.78	2.90	773.7	-6.78	2.65	754.2	-6.78	2.40	734.7
MAY 3	AUG 10	-6.62	4.37	853.8	-6.62	4.04	832.3	-6.62	3.73	811.5	-6.62	3.45	791.7	-6.62	3.17	772.0	-6.62	2.90	752.3	-6.62	2.63	732.6	-6.62	2.36	712.9	-6.62	2.10	693.2
APR 19	AUG 25	-6.43	4.12	799.9	-6.43	3.79	778.5	-6.43	3.48	758.0	-6.43	3.20	738.8	-6.43	2.93	719.6	-6.43	2.66	699.9	-6.43	2.39	680.2	-6.43	2.12	660.5	-6.43	1.85	640.8
APR 4	SEP 9	-6.22	3.85	735.5	-6.22	3.52	714.4	-6.22	3.21	694.5	-6.22	2.93	676.1	-6.22	2.66	657.7	-6.22	2.39	638.2	-6.22	2.12	618.5	-6.22	1.85	598.8	-6.22	1.58	579.1
MAR 21	SEP 23	-6.00	3.57	662.5	-6.00	3.24	641.9	-6.00	2.93	623.0	-6.00	2.66	605.6	-6.00	2.39	587.3	-6.00	2.12	568.9	-6.00	1.85	550.6	-6.00	1.58	532.3	-6.00	1.31	513.9
MAR 7	OCT 8	-5.78	3.29	586.1	-5.78	2.95	566.5	-5.78	2.65	548.6	-5.78	2.38	532.5	-5.78	2.11	516.4	-5.78	1.85	499.9	-5.78	1.58	483.4	-5.78	1.31	466.9	-5.78	1.04	450.4
FEB 20	OCT 22	-5.57	3.02	512.0	-5.57	2.68	493.4	-5.57	2.38	476.8	-5.57	2.11	462.1	-5.57	1.85	446.4	-5.57	1.58	430.0	-5.57	1.31	413.6	-5.57	1.04	397.2	-5.57	0.77	380.8
FEB 7	NOV 5	-5.38	2.77	444.9	-5.38	2.43	427.6	-5.38	2.13	412.3	-5.38	1.87	398.8	-5.38	1.60	384.9	-5.38	1.34	371.1	-5.38	1.07	357.3	-5.38	0.80	343.5	-5.38	0.53	329.7
JAN 23	NOV 19	-5.22	2.56	390.7	-5.22	2.22	376.4	-5.22	1.92	360.3	-5.22	1.66	347.9	-5.22	1.40	334.4	-5.22	1.14	320.9	-5.22	0.88	307.4	-5.22	0.62	293.9	-5.22	0.36	280.4
JAN 10	DEC 3	-5.10	2.40	352.6	-5.10	2.06	337.2	-5.10	1.76	323.9	-5.10	1.50	312.4	-5.10	1.24	301.0	-5.10	0.98	289.6	-5.10	0.72	278.2	-5.10	0.46	266.8	-5.10	0.20	255.4
DEC 22		-5.03	2.31	330.5	-5.03	1.97	315.5	-5.03	1.67	302.7	-5.03	1.41	291.7	-5.03	1.15	280.9	-5.03	0.89	270.1	-5.03	0.63	259.3	-5.03	0.37	248.5	-5.03	0.11	237.7

NOTE - FOR ASPECTS WITH WEST COMPONENTS, THE TIME AND SIGN OF SR AND SS ARE REVERSED.

LATITUDE 30 N
ASPECT ESE - WSW

SLOPE														
10 PCT			20 PCT			30 PCT			40 PCT			50 PCT		
THETA	ALPHA		THETA	ALPHA		THETA	ALPHA		THETA	ALPHA		THETA	ALPHA	
27.7	6.0		25.2	11.6		22.6	16.7		19.9	21.4		17.4	25.7	
SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY
-6.97	6.48	996.6	-6.97	6.02	984.1	-6.97	5.58	968.2	-6.97	5.18	949.5	-6.97	4.81	928.9
-6.90	6.42	988.2	-6.90	5.96	977.5	-6.90	5.53	963.2	-6.90	5.13	946.1	-6.90	4.77	926.9
MAY 18 JUL 12			-6.78	6.31	972.6	-6.78	5.86	964.8	-6.78	5.44	953.4	-6.78	4.71	922.1
MAY 3 AUG 10			-6.62	6.16	947.8	-6.62	5.73	936.5	-6.62	4.96	925.7	-6.62	4.62	912.3
APR 19 AUG 25			-6.43	5.99	912.2	-6.43	5.58	913.4	-6.43	4.84	904.2	-6.43	4.52	894.8
APR 4 SEP 9			-6.22	5.80	866.3	-6.22	5.41	872.7	-6.22	4.71	873.4	-6.22	4.41	868.5
MAR 21 SEP 23			-6.00	5.60	810.0	-6.00	5.23	821.6	-6.00	4.57	832.3	-6.00	4.29	832.0
MAR 7 OCT 8			-5.78	5.40	747.3	-5.78	5.05	763.7	-5.78	4.44	783.7	-5.78	4.17	787.7
FEB 20 OCT 22			-5.57	5.22	682.9	-5.57	4.88	703.4	-5.57	4.31	731.3	-5.57	4.06	739.1
FEB 7 NOV 5			-5.38	5.04	621.7	-5.38	4.73	645.3	-5.38	4.19	679.7	-5.38	3.96	690.4
JAN 23 NOV 19			-5.22	4.90	570.3	-5.22	4.60	596.1	-5.22	4.09	635.0	-5.22	3.87	648.0
JAN 10 DEC 3			-5.10	4.79	533.0	-5.10	4.50	560.2	-5.10	4.01	602.0	-5.10	3.81	616.4
DEC 22			-5.03	4.72	510.9	-5.03	4.44	538.8	-5.03	3.97	582.0	-5.03	3.77	597.3
SLOPE														
60 PCT			70 PCT			80 PCT			90 PCT			100 PCT		
THETA	ALPHA		THETA	ALPHA		THETA	ALPHA		THETA	ALPHA		THETA	ALPHA	
15.0	29.5		12.7	32.9		10.6	36.0		8.6	38.7		6.8	41.1	
SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY
-6.97	4.48	907.3	-6.97	4.18	885.3	-6.97	3.91	863.5	-6.97	3.67	842.5	-6.97	3.46	822.3
-6.90	4.45	906.5	-6.90	4.15	885.6	-6.90	3.89	864.9	-6.90	3.65	844.7	-6.90	3.44	825.2
MAY 18 JUL 27			-6.78	4.39	903.8	-6.78	4.11	884.8	-6.78	3.82	846.9	-6.78	3.42	828.7
MAY 3 AUG 10			-6.62	4.32	897.0	-6.62	4.05	880.7	-6.62	3.80	863.9	-6.62	3.58	830.6
APR 19 AUG 25			-6.43	4.23	883.3	-6.43	3.97	870.2	-6.43	3.74	856.3	-6.43	3.35	827.7
APR 4 SEP 9			-6.22	4.14	861.0	-6.22	3.89	851.6	-6.22	3.68	829.5	-6.22	3.30	817.7
MAR 21 SEP 23			-6.00	4.03	828.7	-6.00	3.81	823.0	-6.00	3.62	807.2	-6.00	3.26	798.1
MAR 7 OCT 8			-5.78	3.93	788.3	-5.78	3.72	786.3	-5.78	3.56	776.8	-5.78	3.21	770.3
FEB 20 OCT 22			-5.57	3.84	743.2	-5.57	3.64	744.4	-5.57	3.51	740.5	-5.57	3.17	736.5
FEB 7 NOV 5			-5.38	3.75	697.5	-5.38	3.57	701.4	-5.38	3.46	702.8	-5.38	3.13	700.3
JAN 23 NOV 19			-5.22	3.68	657.2	-5.22	3.50	663.1	-5.22	3.42	667.6	-5.22	3.10	667.2
JAN 10 DEC 3			-5.10	3.62	627.0	-5.10	3.48	634.3	-5.10	3.41	641.2	-5.10	3.07	641.9
DEC 22			-5.03	3.59	608.6	-5.03	3.43	616.6	-5.03	3.29	621.9	-5.03	3.06	626.2
SLOPE														
YEAR			YEAR			YEAR			YEAR			YEAR		
290.630		5529	288.236		5484	285.317		5428	282.069		5367	278.618		5301
R.i.			R.i.			R.i.			R.i.			R.i.		
286.964		5460	290.393		5525	292.352		5562	292.920		5573	292.270		5561

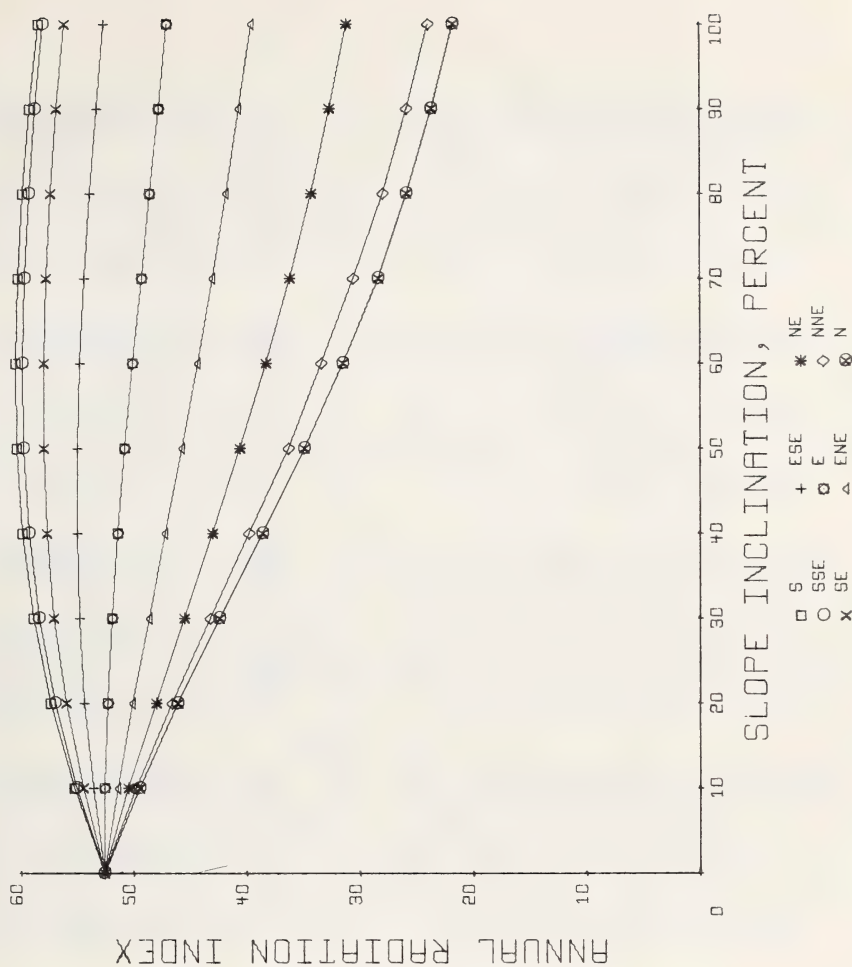
NOTE - FOR ASPECTS WITH WEST COMPONENTS, THE TIME AND SIGN OF SR AND SS ARE REVERSED.

LATITUDE 30 N
ASPECT E - W

		SLOPE																			
		10 PCT		20 PCT		30 PCT		40 PCT		50 PCT											
		THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA
		29.8	6.6	29.4	13.0	28.6	19.1	27.7	24.8	26.6	30.0										
		SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS
JUN 22		-6.97	6.52	1002.4	-6.97	6.08	994.7	-6.97	5.64	982.9	-6.97	5.23	967.9	-6.97	4.84	950.6	-6.97	4.47	934.1	-6.97	4.10
JUN 1 JUL 12		-6.90	6.45	992.3	-6.90	6.01	984.9	-6.90	5.57	973.4	-6.90	5.16	958.8	-6.90	4.78	942.1	-6.90	4.41	925.4	-6.90	4.04
MAY 18 JUL 27		-6.78	6.33	973.8	-6.78	5.89	966.8	-6.78	5.46	956.0	-6.78	5.05	942.2	-6.78	4.67	926.3	-6.78	4.30	910.4	-6.78	3.93
MAY 3 AUG 10		-6.62	6.17	945.1	-6.62	5.73	938.7	-6.62	5.31	928.8	-6.62	4.91	916.1	-6.62	4.53	901.4	-6.62	4.16	886.0	-6.62	3.79
APR 19 AUG 25		-6.43	5.98	904.9	-6.43	5.55	899.3	-6.43	5.13	890.5	-6.43	4.73	879.2	-6.43	4.36	864.0	-6.43	3.99	849.0	-6.43	3.62
APR 4 SEP 9		-6.22	5.78	854.1	-6.22	5.34	849.3	-6.22	4.93	841.8	-6.22	4.54	832.0	-6.22	4.17	820.6	-6.22	3.80	809.0	-6.22	3.43
MAR 21 SEP 23		-6.00	5.56	792.9	-6.00	5.13	789.1	-6.00	4.73	782.9	-6.00	4.35	774.9	-6.00	3.98	765.3	-6.00	3.61	755.7	-6.00	3.24
MAR 7 OCT 8		-5.78	5.34	725.8	-5.78	4.92	722.9	-5.78	4.52	718.1	-5.78	4.15	711.7	-5.78	3.78	704.1	-5.78	3.41	696.5	-5.78	3.04
FEB 20 OCT 22		-5.57	5.14	657.8	-5.57	4.72	655.7	-5.57	4.32	652.2	-5.57	3.96	647.4	-5.57	3.59	641.4	-5.57	3.22	635.4	-5.57	2.85
FEB 7 NOV 5		-5.38	4.95	593.9	-5.38	4.53	592.6	-5.38	4.14	590.1	-5.38	3.79	586.6	-5.38	3.42	582.1	-5.38	3.05	577.6	-5.38	2.68
JAN 23 NOV 19		-5.22	4.79	540.7	-5.22	4.37	539.8	-5.22	3.99	538.2	-5.22	3.64	535.7	-5.22	3.27	532.4	-5.22	2.90	529.1	-5.22	2.53
JAN 10 DEC 3		-5.10	4.67	502.3	-5.10	4.26	501.8	-5.10	3.88	500.8	-5.10	3.53	499.0	-5.10	3.16	496.4	-5.10	2.79	493.9	-5.10	2.42
DEC 22		-5.03	4.60	479.6	-5.03	4.19	479.3	-5.03	3.81	478.6	-5.03	3.47	477.1	-5.03	3.10	475.0	-5.03	2.73	472.5	-5.03	2.36
		YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.
		281.620	.5358	280.171	.5330	277.870	.5287	274.862	.5229	271.314	.5162										
		60 PCT		70 PCT		80 PCT		90 PCT		100 PCT											
		THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA
		25.4	34.7	24.2	39.0	23.0	42.7	21.8	46.1	20.7	49.1										
		SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS
JUN 22		-6.97	4.48	932.2	-6.97	4.15	913.2	-6.97	3.86	894.2	-6.97	3.60	875.8	-6.97	3.36	858.1	-6.97	3.12	840.8	-6.97	2.89
JUN 1 JUL 12		-6.90	4.42	924.1	-6.90	4.10	905.6	-6.90	3.81	887.2	-6.90	3.55	869.2	-6.90	3.31	851.8	-6.90	3.07	834.5	-6.90	2.84
MAY 18 JUL 27		-6.78	4.32	909.2	-6.78	4.01	891.6	-6.78	3.72	873.9	-6.78	3.47	856.7	-6.78	3.23	840.1	-6.78	2.99	823.4	-6.78	2.75
MAY 3 AUG 10		-6.62	4.19	885.6	-6.62	3.88	869.1	-6.62	3.60	852.7	-6.62	3.35	836.6	-6.62	3.11	820.9	-6.62	2.87	805.2	-6.62	2.63
APR 19 AUG 25		-6.43	4.04	851.7	-6.43	3.73	836.9	-6.43	3.46	821.9	-6.43	3.22	807.2	-6.43	2.98	792.9	-6.43	2.74	778.6	-6.43	2.50
APR 4 SEP 9		-6.22	3.86	808.2	-6.22	3.57	795.1	-6.22	3.31	781.8	-6.22	3.08	768.7	-6.22	2.84	755.9	-6.22	2.60	743.1	-6.22	2.36
MAR 21 SEP 23		-6.00	3.69	754.8	-6.00	3.40	743.6	-6.00	3.15	732.2	-6.00	2.93	720.9	-6.00	2.70	709.7	-6.00	2.46	698.4	-6.00	2.22
MAR 7 OCT 8		-5.78	3.51	695.4	-5.78	3.23	686.2	-5.78	2.99	676.7	-5.78	2.78	667.1	-5.78	2.54	657.6	-5.78	2.30	648.1	-5.78	2.06
FEB 20 OCT 22		-5.57	3.34	634.6	-5.57	3.07	627.1	-5.57	2.84	619.4	-5.57	2.63	611.4	-5.57	2.39	603.5	-5.57	2.15	595.6	-5.57	1.91
FEB 7 NOV 5		-5.38	3.18	576.8	-5.38	2.92	570.9	-5.38	2.70	564.7	-5.38	2.50	558.2	-5.38	2.26	550.7	-5.38	2.02	543.2	-5.38	1.78
JAN 23 NOV 19		-5.22	3.05	528.3	-5.22	2.80	523.6	-5.22	2.58	518.5	-5.22	2.39	513.2	-5.22	2.15	507.7	-5.22	1.91	502.2	-5.22	1.67
JAN 10 DEC 3		-5.10	2.95	493.1	-5.10	2.71	489.3	-5.10	2.49	485.0	-5.10	2.31	480.5	-5.10	2.07	475.8	-5.10	1.83	471.1	-5.10	1.59
DEC 22		-5.03	2.89	472.2	-5.03	2.65	468.8	-5.03	2.44	465.0	-5.03	2.26	460.9	-5.03	2.02	456.7	-5.03	1.78	452.4	-5.03	1.54
		YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.
		267.402	.5088	263.277	.5009	259.078	.4929	254.914	.4850	250.825	.4772										

NOTE - FOR ASPECTS WITH WEST COMPONENTS, THE TIME AND SIGN

RADIATION INDEXES FOR VARIOUS FACETS AT LATITUDE 32 N



HORIZONTAL SURFACE

LATITUDE 32 N			
	SR	SS	LY
JUN 22	-7.05	7.05	1010.4
JUN 1 JUL 12	-6.97	6.97	998.6
MAY 18 JUL 27	-6.84	6.84	977.3
MAY 3 AUG 10	-6.67	6.67	944.6
APR 19 AUG 25	-6.46	6.46	899.7
APR 4 SEP 9	-6.24	6.24	843.8
MAR 21 SEP 23	-6.00	6.00	777.7
MAR 7 OCT 8	-5.76	5.76	706.2
FEB 20 OCT 22	-5.54	5.54	634.5
FEB 7 NOV 5	-5.33	5.33	567.8
JAN 23 NOV 19	-5.16	5.16	512.6
JAN 10 DEC 3	-5.03	5.03	473.1
DEC 22	-4.95	4.95	449.7

YEAR R.P.
276.961 .5269

LATITUDE 32 N
ASPECT N -

			10 PCT			20 PCT			SLOPE			30 PCT			40 PCT			50 PCT		
			THETA	ALPHA		THETA	ALPHA		THETA	ALPHA		THETA	ALPHA		THETA	ALPHA		THETA	ALPHA	
			37.7	0.0		43.3	0.0		48.7	0.0		53.8	0.0		58.6	0.0				
			SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	
JUN 22			-7.05	7.05	1019.2	-7.05	7.05	1018.0	-7.05	7.05	1007.7	-7.05	7.05	989.7	-7.05	7.05	965.9	-7.05	7.05	
JUN 1 JUL 12			-6.97	6.97	1002.8	-6.97	6.97	997.3	-6.97	6.97	982.9	-6.97	6.97	961.4	-6.97	6.97	934.4	-6.97	6.97	
MAY 18 JUL 27			-6.84	6.84	973.7	-6.84	6.84	960.9	-6.84	6.84	935.9	-6.84	6.84	912.4	-6.84	6.84	880.1	-6.84	6.84	
MAY 3 AUG 10			-6.67	6.67	930.5	-6.67	6.67	907.7	-6.67	6.67	877.7	-6.67	6.67	842.1	-6.67	6.67	802.8	-6.67	6.67	
APR 19 AUG 25			-6.46	6.46	873.2	-6.46	6.46	838.8	-6.46	6.46	798.2	-6.46	6.46	753.2	-6.46	6.46	705.8	-6.46	6.46	
APR 4 SEP 9			-6.24	6.24	804.2	-6.24	6.24	757.7	-6.24	6.24	706.1	-6.24	6.24	651.5	-6.24	6.24	595.8	-6.24	6.24	
MAR 21 SEP 23			-6.00	6.00	725.5	-6.00	6.00	667.3	-6.00	6.00	605.3	-6.00	6.00	541.6	-6.00	6.00	478.3	-6.00	6.00	
MAR 7 OCT 8			-5.71	5.71	642.7	-5.64	5.64	574.5	-5.57	5.57	504.0	-5.48	5.48	433.3	-5.38	5.38	364.5	-5.27	5.27	
FEB 20 OCT 22			-5.43	5.43	562.1	-5.30	5.30	486.5	-5.15	5.15	410.1	-4.98	4.98	335.5	-4.77	4.77	264.5	-4.55	4.55	
FEB 7 NOV 5			-5.17	5.17	489.0	-4.98	4.98	408.5	-4.77	4.77	329.1	-4.51	4.51	253.3	-4.19	4.19	183.3	-3.86	3.86	
JAN 23 NOV 19			-4.95	4.95	429.7	-4.71	4.71	346.5	-4.43	4.43	266.2	-4.09	4.09	191.3	-3.66	3.66	124.3	-3.23	3.23	
JAN 10 DEC 3			-4.79	4.79	387.9	-4.51	4.51	303.6	-4.18	4.18	223.5	-3.77	3.77	150.4	-3.25	3.25	87.1	-2.82	2.82	
DEC 22			-4.69	4.69	363.5	-4.39	4.39	279.0	-4.02	4.02	199.4	-3.57	3.57	127.8	-3.15	3.15	67.2	-2.72	2.72	
			YEAR	R.I.		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.	
			260.592	4.958		242.336	4.611		222.960	4.242		203.232	3.867		183.923	3.499		164.615	3.131	
			60 PCT			70 PCT			80 PCT			90 PCT			100 PCT					
			THETA	ALPHA		THETA	ALPHA		THETA	ALPHA		THETA	ALPHA		THETA	ALPHA		THETA	ALPHA	
			63.0	0.0		67.0	0.0		70.7	0.0		74.0	0.0		77.0	0.0		79.0	0.0	
			SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	
JUN 22			-7.05	7.05	937.9	-7.05	7.05	907.4	-7.05	7.05	875.7	-7.05	7.05	844.0	-7.05	7.05	812.7	-7.05	7.05	
JUN 1 JUL 12			-6.97	6.97	903.7	-6.97	6.97	870.8	-6.97	6.97	837.2	-6.97	6.97	803.9	-6.97	6.97	771.2	-6.97	6.97	
MAY 18 JUL 27			-6.84	6.84	844.9	-6.84	6.84	808.3	-6.84	6.84	771.5	-6.84	6.84	735.5	-6.84	6.84	700.6	-6.84	6.84	
MAY 3 AUG 10			-6.67	6.67	761.5	-6.67	6.67	719.8	-6.67	6.67	678.7	-6.67	6.67	639.2	-6.67	6.67	601.4	-6.67	6.67	
APR 19 AUG 25			-6.46	6.46	657.7	-6.46	6.46	610.2	-6.46	6.46	564.3	-6.46	6.46	520.9	-6.46	6.46	479.8	-6.46	6.46	
APR 4 SEP 9			-6.24	6.24	540.7	-6.24	6.24	487.4	-6.24	6.24	436.8	-6.24	6.24	389.6	-6.24	6.24	345.4	-6.24	6.24	
MAR 21 SEP 23			-6.00	6.00	416.8	-6.00	6.00	358.3	-6.00	6.00	303.6	-6.00	6.00	253.0	-6.00	6.00	206.3	-6.00	6.00	
MAR 7 OCT 8			-5.26	5.26	299.0	-5.10	5.10	238.0	-4.91	4.91	182.2	-4.66	4.66	132.0	-4.31	4.31	87.2	-3.96	3.96	
FEB 20 OCT 22			-4.52	4.52	199.0	-4.20	4.20	139.9	-3.78	3.78	88.4	-3.19	3.19	45.5	-2.22	2.22	13.0	-1.25	1.25	
FEB 7 NOV 5			-3.79	3.79	121.0	-3.26	3.26	68.0	-2.49	2.49	25.5	-1.91	1.91	1.1	0.00	0.00	0.0	0.00	0.00	
JAN 23 NOV 19			-3.10	3.10	67.6	-2.28	2.28	23.9	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	
JAN 10 DEC 3			-2.52	2.52	36.4	-1.21	1.21	3.6	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	
DEC 22			-2.10	2.10	21.3	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	
			YEAR	R.I.		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.	
			165.767	3.154		149.600	2.846		136.187	2.591		124.734	2.373		114.780	2.184		104.827	1.975	

NOTE - FOR ASPECTS WITH WEST COMPONENTS, THE TIME AND SIGN OF SR AND SS ARE REVERSED.

LATITUDE 32 N
ASPECT S -

	SLOPE																				
	10 PCT			20 PCT			30 PCT			40 PCT			50 PCT								
	THETA	ALPHA	LY	THETA	ALPHA	LY	THETA	ALPHA	LY	THETA	ALPHA	LY	THETA	ALPHA	LY	THETA	ALPHA	LY	THETA	ALPHA	LY
JUN 22	-6.83	6.83	992.8	-6.63	6.63	968.0	-6.46	6.46	937.3	-6.30	6.30	901.9	-6.16	6.16	863.5						
JUN 1 JUL 12	-6.77	6.77	985.5	-6.58	6.58	965.1	-6.42	6.42	938.2	-6.28	6.28	906.3	-6.15	6.15	871.1						
JUN 18 JUL 27	-6.67	6.67	971.9	-6.51	6.51	958.6	-6.37	6.37	938.4	-6.24	6.24	912.6	-6.13	6.13	882.7						
MAY 3 AUG 10	-6.53	6.53	949.8	-6.40	6.40	946.6	-6.29	6.29	935.8	-6.19	6.19	918.6	-6.10	6.10	896.4						
APR 19 AUG 25	-6.36	6.36	917.5	-6.28	6.28	926.5	-6.20	6.20	927.2	-6.13	6.13	920.7	-6.07	6.07	908.2						
APR 4 SEP 9	-6.19	6.19	875.1	-6.14	6.14	897.4	-6.10	6.10	910.9	-6.07	6.07	916.3	-6.04	6.04	914.9						
MAR 21 SEP 23	-6.00	6.00	822.3	-6.00	6.00	858.0	-6.00	6.00	884.6	-6.00	6.00	902.6	-6.00	6.00	913.0						
MAR 7 OCT 8	-5.76	5.76	72.8	-5.76	5.76	810.8	-5.76	5.76	849.7	-5.76	5.76	879.6	-5.76	5.76	901.2						
FEB 20 OCT 22	-5.54	5.54	700.9	-5.54	5.54	759.2	-5.54	5.54	808.4	-5.54	5.54	848.4	-5.54	5.54	879.8						
FEB 7 NOV 5	-5.33	5.33	641.6	-5.33	5.33	707.7	-5.33	5.33	764.9	-5.33	5.33	812.9	-5.33	5.33	851.9						
JAN 23 NOV 19	-5.16	5.16	591.4	-5.16	5.16	662.9	-5.16	5.16	725.7	-5.16	5.16	779.3	-5.16	5.16	823.8						
JAN 10 DEC 3	-5.03	5.03	554.8	-5.03	5.03	629.6	-5.03	5.03	695.8	-5.03	5.03	752.9	-5.03	5.03	800.8						
DEC 22	-4.95	4.95	533.0	-4.95	4.95	609.4	-4.95	4.95	677.4	-4.95	4.95	736.3	-4.95	4.95	786.1						
	YEAR	R.I.		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.	
	290.812	.5533		301.771	.5741		309.752	.5893		314.922	.5992		317.608	.6043							
	SLOPE																				
	60 PCT			70 PCT			80 PCT			90 PCT			100 PCT								
	THETA	ALPHA	LY	THETA	ALPHA	LY	THETA	ALPHA	LY	THETA	ALPHA	LY	THETA	ALPHA	LY	THETA	ALPHA	LY	THETA	ALPHA	LY
JUN 22	-6.03	6.03	823.8	-5.91	5.91	783.9	-5.81	5.81	744.9	-5.71	5.71	707.5	-5.62	5.62	672.0						
JUN 1 JUL 12	-6.03	6.03	834.0	-5.92	5.92	796.4	-5.82	5.82	759.4	-5.73	5.73	723.7	-5.64	5.64	689.5						
MAY 18 JUL 27	-6.02	6.02	850.3	-5.93	5.93	816.8	-5.84	5.84	783.2	-5.76	5.76	746.4	-5.69	5.69	718.8						
MAY 3 AUG 10	-6.02	6.02	870.8	-5.94	5.94	843.2	-5.88	5.88	814.8	-5.81	5.81	786.4	-5.75	5.75	758.5						
APR 19 AUG 25	-6.01	6.01	891.3	-5.96	5.96	871.4	-5.91	5.91	849.6	-5.87	5.87	827.1	-5.83	5.83	804.3						
APR 4 SEP 9	-6.01	6.01	908.0	-5.98	5.98	897.0	-5.96	5.96	883.3	-5.93	5.93	861.7	-5.91	5.91	851.1						
MAR 21 SEP 23	-6.00	6.00	917.0	-6.00	6.00	915.8	-6.00	6.00	910.9	-6.00	6.00	903.2	-6.00	6.00	893.6						
MAR 7 OCT 8	-5.76	5.76	915.7	-5.76	5.76	924.3	-5.76	5.76	928.0	-5.76	5.76	928.2	-5.76	5.76	925.6						
FEB 20 OCT 22	-5.54	5.54	903.3	-5.54	5.54	920.2	-5.54	5.54	931.6	-5.54	5.54	938.7	-5.54	5.54	942.3						
FEB 7 NOV 5	-5.33	5.33	882.7	-5.33	5.33	906.4	-5.33	5.33	924.0	-5.33	5.33	936.6	-5.33	5.33	945.0						
JAN 23 NOV 19	-5.16	5.16	859.8	-5.16	5.16	888.4	-5.16	5.16	910.6	-5.16	5.16	927.4	-5.16	5.16	940.0						
JAN 10 DEC 3	-5.03	5.03	840.2	-5.03	5.03	871.9	-5.03	5.03	897.0	-5.03	5.03	916.6	-5.03	5.03	931.7						
DEC 22	-4.95	4.95	827.2	-4.95	4.95	860.6	-4.95	4.95	887.3	-4.95	4.95	908.4	-4.95	4.95	924.9						
	YEAR	R.I.		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.	
	318.226	.6055		317.219	.6035		315.000	.5993		311.934	.5935		308.280	.5865							

NOTE - FOR ASPECTS WITH WEST COMPONENTS, THE TIME AND SIGN OF SR AND SS ARE REVERSED.

LATITUDE 32 N
ASPECT NNE - NNW

		SLOPE																	
		10 PCT		20 PCT		30 PCT		40 PCT		50 PCT									
		THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA
		37.3	2.7	42.3	5.8	47.1	9.3	51.5	13.2	55.5	17.6								
		SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY
JUN 22	JUN 22	-7.05	7.05	1018.2	-7.05	7.05	1015.9	-7.05	7.05	1004.7	-7.05	7.05	985.8	-7.05	7.05	961.1	-7.05	7.05	931.2
	JUN 1	-6.97	6.97	1002.1	-6.97	6.97	995.9	-6.97	6.97	980.9	-6.97	6.97	958.8	-6.97	6.97	931.2	-6.97	6.97	901.2
	MAY 18	-6.84	6.84	973.6	-6.84	6.84	960.7	-6.84	6.84	939.6	-6.84	6.84	912.0	-6.84	6.84	879.7	-6.84	6.84	846.8
	MAY 3	-6.67	6.63	931.2	-6.67	6.59	909.2	-6.67	6.54	879.9	-6.67	6.49	845.0	-6.67	6.42	806.4	-6.67	6.35	773.0
	APR 19	-6.46	6.38	874.9	-6.46	6.29	842.4	-6.46	6.18	803.8	-6.46	6.06	761.0	-6.46	5.91	715.8	-6.46	5.84	682.4
MAR 21	APR 4	-6.24	6.10	807.1	-6.24	5.95	763.9	-6.24	5.79	716.0	-6.24	5.60	665.5	-6.24	5.43	618.2	-6.24	5.26	570.7
	MAR 21	-6.00	5.82	729.6	-6.00	5.61	676.3	-6.00	5.38	620.0	-6.00	5.12	562.9	-6.00	4.83	507.0	-6.00	4.54	452.1
	MAR 7	-5.76	5.53	647.9	-5.76	5.27	586.1	-5.76	4.97	523.1	-5.76	4.64	461.2	-5.76	4.28	402.3	-5.76	3.91	343.4
	FEB 20	-5.54	5.25	568.1	-5.54	4.94	499.8	-5.54	4.58	432.1	-5.54	4.18	367.3	-5.54	3.74	301.4	-5.54	3.29	235.5
	FEB 7	-5.33	5.00	495.5	-5.33	4.63	422.8	-5.33	4.22	352.4	-5.33	3.75	286.6	-5.33	3.23	221.3	-5.33	2.78	166.6
DEC 22	JAN 23	-5.14	4.79	436.5	-5.14	4.37	361.3	-5.14	3.90	289.8	-5.13	3.37	224.3	-5.12	2.78	166.6	-5.11	2.17	101.7
	JAN 10	-4.99	4.63	394.8	-4.95	4.17	318.5	-4.90	3.66	246.9	-4.85	3.09	182.4	-4.77	2.43	126.8	-4.67	1.71	68.9
	JAN 3	-4.83	4.46	370.5	-4.83	4.06	293.8	-4.76	3.52	222.5	-4.67	2.91	159.0	-4.55	2.21	105.0	-4.43	1.49	61.7
	DEC 22	-4.60	4.23	340.0	-4.57	3.83	264.1	-4.49	3.29	194.6	-4.40	2.69	125.1	-4.29	2.00	70.0	-4.17	1.29	25.1
	DEC 9	-4.40	4.01	311.1	-4.37	3.64	235.3	-4.30	3.11	166.6	-4.21	2.51	101.7	-4.10	1.81	56.8	-4.00	1.00	0.0
JUN 22	JUN 22	-7.05	7.05	932.4	-7.05	7.05	901.3	-7.05	7.05	869.1	-7.05	7.05	836.9	-7.05	7.05	805.2	-7.05	7.05	773.5
	JUN 1	-6.97	6.97	900.0	-6.97	6.97	868.8	-6.97	6.97	832.9	-6.97	6.97	799.2	-6.97	6.97	766.3	-6.97	6.97	733.4
	MAY 18	-6.84	6.84	844.4	-6.84	6.84	807.7	-6.84	6.84	770.9	-6.84	6.84	734.8	-6.84	6.84	699.9	-6.84	6.84	667.0
	MAY 3	-6.67	6.35	765.9	-6.67	6.25	724.9	-6.67	6.14	684.6	-6.67	6.00	645.9	-6.67	5.83	609.0	-6.67	5.66	576.1
	APR 19	-6.46	6.15	670.0	-6.46	5.96	625.0	-6.46	5.84	582.0	-6.46	5.69	541.6	-6.46	5.52	504.0	-6.46	5.35	467.1
MAR 21	APR 4	-6.24	5.13	564.0	-6.24	4.85	516.1	-6.24	4.54	471.6	-6.24	4.20	430.9	-6.24	3.83	394.1	-6.24	3.46	357.2
	MAR 21	-6.00	4.50	453.8	-6.00	4.14	404.6	-6.00	3.74	360.1	-6.00	3.32	320.7	-6.00	2.88	286.2	-6.00	2.44	251.3
	MAR 7	-5.76	3.87	347.9	-5.76	3.42	299.1	-5.76	2.94	256.5	-5.76	2.44	220.0	-5.76	1.92	189.2	-5.76	1.40	157.4
	FEB 20	-5.54	3.25	253.7	-5.54	2.72	207.0	-5.54	2.15	167.6	-5.54	1.55	135.4	-5.54	0.95	109.5	-5.54	0.35	73.6
	FEB 7	-5.33	2.65	175.7	-5.33	2.02	132.5	-5.33	1.35	97.6	-5.33	0.64	70.6	-5.33	-0.08	50.4	-5.33	-0.68	10.0
JAN 10	JAN 23	-5.11	2.11	117.9	-5.10	1.38	78.7	-5.08	0.57	48.7	-5.06	-0.30	27.3	-5.02	-1.23	13.2	-4.97	-2.16	-1.7
	JAN 10	-4.68	1.68	81.2	-4.56	0.84	45.9	-4.38	-0.13	20.9	-4.08	-1.28	5.6	0.00	0.00	0.0	0.00	0.00	0.0
	DEC 3	-4.40	1.40	61.7	-4.19	0.46	29.6	-3.84	-0.68	8.7	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0
	DEC 22	-4.40	1.40	61.7	-4.19	0.46	29.6	-3.84	-0.68	8.7	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0
	DEC 9	-4.40	1.40	61.7	-4.19	0.46	29.6	-3.84	-0.68	8.7	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0
		YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.
		175.794	0.3345	160.870	0.3061	147.635	0.2809	136.218	0.2592	126.459	0.2406								

NOTE - FOR ASPECTS WITH WEST COMPONENTS, THE TIME AND SIGN OF SR AND SS ARE REVERSED.

LATITUDE 32 N
ASPECT SSE - SSW

	SLOPE										SLOPE										SLOPE										SLOPE																			
	10 PCT					20 PCT					30 PCT					40 PCT					50 PCT					60 PCT					70 PCT					80 PCT					90 PCT					100 PCT				
	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY					
JUN 22	-7.00	6.68	994.3			-6.96	6.35	971.9			-6.93	6.05	944.1			-6.90	5.79	912.2			-6.87	5.54	877.5			-6.84	5.33	841.5			-6.82	5.13	805.3			-6.80	4.95	769.9			-6.78	4.78	735.9			-6.76	4.63	703.5		
JUN 1 JUL 12	-6.94	6.62	986.7			-6.92	6.30	968.4			-6.89	6.02	944.3			-6.87	5.76	915.7			-6.85	5.53	884.0			-6.83	5.31	850.6			-6.82	5.13	816.6			-6.81	4.96	783.1			-6.80	4.80	750.8			-6.78	4.65	719.8		
MAY 18 JUL 27	-6.84	6.51	972.5			-6.84	6.22	960.9			-6.83	5.96	943.2			-6.83	5.72	920.3			-6.83	5.50	893.7			-6.83	5.28	860.3			-6.82	5.09	826.9			-6.82	4.92	794.5			-6.82	4.76	762.1			-6.82	4.61	730.7		
MAY 3 AUG 10	-6.67	6.37	949.7			-6.67	6.11	947.5			-6.67	5.88	938.5			-6.67	5.66	923.8			-6.67	5.47	904.5			-6.67	5.25	878.1			-6.67	5.04	849.7			-6.67	4.84	820.3			-6.67	4.64	790.9			-6.67	4.45	761.5		
APR 19 AUG 25	-6.46	6.21	916.4			-6.46	5.98	925.5			-6.46	5.78	927.2			-6.46	5.60	922.3			-6.46	5.43	912.0			-6.46	5.21	887.6			-6.46	5.00	863.2			-6.46	4.80	838.8			-6.46	4.60	814.4			-6.46	4.40	790.0		
APR 4 SEP 9	-6.24	6.03	872.9			-6.24	5.84	894.1			-6.24	5.67	907.3			-6.24	5.52	913.1			-6.24	5.38	921.6			-6.24	5.16	897.2			-6.24	4.95	872.8			-6.24	4.75	848.4			-6.24	4.55	824.0			-6.24	4.35	800.6		
MAR 21 SEP 23	-6.00	5.84	819.0			-6.00	5.69	852.1			-6.00	5.56	876.9			-6.00	5.44	893.6			-6.00	5.34	903.3			-6.00	5.12	878.9			-6.00	4.91	854.5			-6.00	4.71	830.1			-6.00	4.51	805.7			-6.00	4.31	781.3		
MAR 7 OCT 8	-5.76	5.65	758.4			-5.76	5.54	802.5			-5.76	5.45	838.0			-5.76	5.37	865.0			-5.76	5.29	884.2			-5.76	5.10	860.7			-5.76	4.91	837.3			-5.76	4.72	813.9			-5.76	4.54	790.5			-5.76	4.36	767.1		
FEB 20 OCT 22	-5.54	5.47	695.7			-5.54	5.40	749.0			-5.54	5.34	793.7			-5.54	5.29	829.6			-5.54	5.25	857.3			-5.54	5.06	834.0			-5.54	4.87	810.6			-5.54	4.69	787.2			-5.54	4.51	763.8			-5.54	4.34	740.4		
FEB 7 NOV 5	-5.33	5.30	635.8			-5.33	5.27	696.3			-5.33	5.25	748.2			-5.33	5.23	791.3			-5.33	5.21	826.0			-5.33	5.03	802.7			-5.33	4.85	779.3			-5.33	4.68	756.9			-5.33	4.51	734.5			-5.33	4.34	711.1		
JAN 23 NOV 19	-5.16	5.16	585.2			-5.16	5.16	650.7			-5.16	5.16	707.8			-5.16	5.16	756.2			-5.16	5.16	796.0			-5.16	4.99	772.7			-5.16	4.82	749.3			-5.16	4.65	726.9			-5.16	4.48	704.5			-5.16	4.31	682.1		
JAN 10 DEC 3	-4.93	5.03	568.4			-4.93	5.03	617.0			-4.93	5.03	677.3			-4.93	5.03	729.0			-4.93	5.03	776.9			-4.93	4.86	753.6			-4.93	4.69	730.3			-4.93	4.52	706.9			-4.93	4.35	683.5			-4.93	4.18	660.1		
DEC 22	-4.95	4.95	526.5			-4.95	4.95	596.6			-4.95	4.95	658.6			-4.95	4.95	712.0			-4.95	4.95	756.9			-4.95	4.78	733.6			-4.95	4.61	710.2			-4.95	4.44	686.8			-4.95	4.27	663.4			-4.95	4.10	640.0		
JUN 22	-6.84	5.33	841.5			-6.82	5.13	805.3			-6.80	4.95	769.9			-6.78	4.78	735.9			-6.76	4.63	703.5			-6.74	4.45	679.1			-6.72	4.27	654.7			-6.70	4.10	630.3			-6.68	3.92	605.9			-6.66	3.75	581.5		
JUN 1 JUL 12	-6.84	5.32	850.6			-6.82	5.13	816.6			-6.81	4.96	783.1			-6.80	4.80	750.8			-6.78	4.65	719.8			-6.76	4.48	695.4			-6.74	4.31	671.0			-6.72	4.14	646.6			-6.70	3.97	622.2			-6.68	3.80	597.8		
MAY 18 JUL 27	-6.83	5.31	864.9			-6.82	5.13	834.9			-6.82	4.97	804.8			-6.82	4.82	775.4			-6.82	4.69	746.9			-6.82	4.56	718.0			-6.82	4.43	689.1			-6.82	4.30	660.2			-6.82	4.17	631.3			-6.82	4.04	602.4		
MAY 3 AUG 10	-6.67	5.30	882.2			-6.67	5.14	857.8			-6.67	4.99	832.7			-6.67	4.86	807.5			-6.67	4.74	782.7			-6.67	4.61	753.8			-6.67	4.48	724.9			-6.67	4.35	696.0			-6.67	4.22	667.1			-6.67	4.09	638.2		
APR 19 AUG 25	-6.46	5.28	897.5			-6.46	5.14	880.3			-6.46	5.02	861.3			-6.46	4.91	841.5			-6.46	4.80	821.3			-6.46	4.68	792.4			-6.46	4.56	763.5			-6.46	4.44	734.6			-6.46	4.32	705.7			-6.46	4.20	676.8		
APR 4 SEP 9	-6.24	5.26	907.1			-6.24	5.15	897.7			-6.24	5.05	885.7			-6.24	4.95	871.9			-6.24	4.87	857.1			-6.24	4.78	844.8			-6.24	4.69	832.0			-6.24	4.60	818.9			-6.24	4.51	805.8			-6.24	4.42	792.7		
MAR 21 SEP 23	-6.00	5.24	906.9			-6.00	5.15	905.8			-6.00	5.08	901.1			-6.00	5.00	893.9			-6.00	4.94	884.8			-6.00	4.86	871.7			-6.00	4.78	858.6			-6.00	4.70	845.4			-6.00	4.62	832.2			-6.00	4.54	819.0		
MAR 7 OCT 8	-5.76	5.22	896.7			-5.76	5.16	903.7			-5.76	5.10	906.2			-5.76	5.05	905.4			-5.76	5.00	902.1			-5.76	4.94	894.9			-5.76	4.88	882.4			-5.76	4.82	870.9			-5.76	4.76	859.4			-5.76	4.70	847.9		
FEB 20 OCT 22	-5.54	5.20	877.7			-5.54	5.17	891.9			-5.54	5.13	901.0			-5.54	5.10	906.1			-5.54	5.07	908.1			-5.54	5.03	904.7			-5.54	4.99	901.3			-5.54	4.95	897.9			-5.54	4.91	894.5			-5.54	4.87	891.1		
FEB 7 NOV 5	-5.33	5.19	852.9			-5.33	5.17	873.2			-5.33	5.16	887.9			-5.33	5.14	898.0			-5.33	5.13	904.7			-5.33	5.11	901.3			-5.33	5.09	897.9			-5.33	5.07	895.5			-5.33	5.05	893.1			-5.33	5.03	890.7		
JAN 23 NOV 19	-5.16	5.16	827.8			-5.16	5.16	852.7			-5.16	5.16	871.7			-5.16	5.16	885.8			-5.16	5.16	896.1			-5.16	5.15	892.7			-5.16	5.14	888.7			-5.16	5.13	884.7			-5.16	5.12	880.7			-5.16	5.11	876.7		
JAN 10 DEC 3	-5.03	5.03	807.1			-5.03	5.03	835.1			-5.03	5.03	856.9			-5.03	5.03	873.6			-5.03	5.03	886.2			-5.03	5.03	891.8			-5.03	5.03	897.0			-5.03	5.03	902.2			-5.03	5.03	907.4			-5.03	5.03	912.6		
JAN 10 DEC 22	-4.95	4.95	793.6			-4.95	4.95	823.2			-4.95	4.95	846.5			-4.95	4.95	864.7			-4.95	4.95	878.7			-4.95	4.95	883.9			-4.95	4.95	889.1			-4.95	4.95	894.3			-4.95	4.95	899.5			-4.95	4.95	904.7		

NOTE - FOR ASPECTS WITH WEST COMPONENTS, THE TIME AND SIGN OF SR AND SS ARE REVERSED.

LATITUDE 32 N
ASPECT NE - NW

		SLOPE																	
		10 PCT		20 PCT		30 PCT		40 PCT		50 PCT									
		THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA
		35.9	5.0	39.6	10.4	42.8	16.1	45.6	22.1	47.9	28.2								
		SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY
JUN 22		-7.05	6.89	1015.4	-7.05	6.71	1011.2	-7.05	6.51	998.7	-7.05	6.29	979.5	-7.05	6.04	955.5	-7.05	6.04	955.5
JUN 1 JUL 12		-6.97	6.80	1000.4	-6.97	6.61	993.3	-6.97	6.39	978.4	-6.97	6.15	957.2	-6.97	5.89	931.7	-6.97	5.89	931.7
MAY 18 JUL 27		-6.84	6.65	973.8	-6.84	6.43	961.9	-6.84	6.19	942.9	-6.84	5.93	918.5	-6.84	5.65	890.5	-6.84	5.65	890.5
MAY 3 AUG 10		-6.67	6.45	933.8	-6.67	6.20	915.6	-6.67	5.93	891.3	-6.67	5.63	862.6	-6.67	5.32	831.4	-6.67	5.32	831.4
APR 19 AUG 25		-6.46	6.20	880.4	-6.46	5.92	854.9	-6.46	5.61	824.5	-6.46	5.29	791.2	-6.46	4.95	756.7	-6.46	4.95	756.7
APR 4 SEP 9		-6.24	5.94	815.7	-6.24	5.62	782.6	-6.24	5.28	746.3	-6.24	4.92	708.6	-6.24	4.54	671.1	-6.24	4.54	671.1
MAR 21 SEP 23		-6.00	5.67	741.1	-6.00	5.31	701.0	-6.00	4.93	659.4	-6.00	4.53	618.0	-6.00	4.12	578.3	-6.00	4.12	578.3
MAR 7 OCT 8		-5.76	5.39	662.0	-5.76	5.00	616.0	-5.76	4.58	570.2	-5.76	4.14	526.2	-5.76	3.70	485.4	-5.76	3.70	485.4
FEB 20 OCT 22		-5.54	5.13	584.3	-5.54	4.70	533.8	-5.54	4.24	485.4	-5.54	3.77	439.8	-5.54	3.30	398.8	-5.54	3.30	398.8
FEB 7 NOV 5		-5.33	4.89	513.2	-5.33	4.42	459.8	-5.33	3.93	409.6	-5.33	3.43	363.9	-5.33	2.92	323.7	-5.33	2.92	323.7
JAN 23 NOV 19		-5.16	4.68	455.2	-5.16	4.18	400.1	-5.16	3.66	349.3	-5.16	3.13	304.1	-5.16	2.60	265.1	-5.16	2.60	265.1
JAN 10 DEC 3		-5.03	4.53	414.1	-5.03	4.01	358.3	-5.03	3.46	307.5	-5.03	2.91	262.9	-5.03	2.35	225.1	-5.03	2.35	225.1
DEC 22		-4.95	4.44	390.0	-4.95	3.90	333.9	-4.95	3.34	283.4	-4.95	2.77	239.4	-4.95	2.20	202.4	-4.95	2.20	202.4
		YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.
		265.436	450.50	252.732	448.08	239.459	445.56	226.176	443.03	213.375	440.60								
		SLOPE																	
		60 PCT		70 PCT		80 PCT		90 PCT		100 PCT									
		THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA
		49.7	34.2	51.1	40.2	52.0	45.9	52.7	51.2	53.0	56.2								
		SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY
JUN 22		-7.05	5.77	928.6	-7.05	5.49	900.2	-7.05	5.20	871.7	-7.05	4.90	844.0	-7.05	4.60	817.5	-7.05	4.60	817.5
JUN 1 JUL 12		-6.97	5.61	903.6	-6.97	5.32	874.4	-6.97	5.01	845.4	-6.97	4.71	817.5	-6.97	4.41	791.0	-6.97	4.41	791.0
MAY 18 JUL 27		-6.84	5.35	860.6	-6.84	5.04	830.2	-6.84	4.72	800.6	-6.84	4.41	772.4	-6.84	4.10	746.0	-6.84	4.10	746.0
MAY 3 AUG 10		-6.67	5.00	799.3	-6.67	4.67	767.6	-6.67	4.34	737.3	-6.67	4.01	709.0	-6.67	3.70	682.8	-6.67	3.70	682.8
APR 19 AUG 25		-6.46	4.59	722.4	-6.46	4.24	689.6	-6.46	3.89	658.9	-6.46	3.56	630.9	-6.46	3.24	605.3	-6.46	3.24	605.3
APR 4 SEP 9		-6.24	4.16	635.2	-6.24	3.79	601.7	-6.24	3.42	571.1	-6.24	3.08	543.8	-6.24	2.75	519.3	-6.24	2.75	519.3
MAR 21 SEP 23		-6.00	3.72	541.5	-6.00	3.32	508.1	-6.00	2.94	478.3	-6.00	2.58	452.3	-6.00	2.25	429.4	-6.00	2.25	429.4
MAR 7 OCT 8		-5.76	3.27	448.5	-5.76	2.85	416.0	-5.76	2.46	387.7	-5.76	2.09	363.5	-5.76	1.75	342.6	-5.76	1.75	342.6
FEB 20 OCT 22		-5.54	2.84	362.9	-5.54	2.40	331.9	-5.54	1.99	305.6	-5.54	1.61	283.6	-5.54	1.26	264.9	-5.54	1.26	264.9
FEB 7 NOV 5		-5.33	2.44	289.2	-5.33	1.97	260.2	-5.33	1.54	236.3	-5.33	1.15	216.5	-5.33	0.80	200.3	-5.33	0.80	200.3
JAN 23 NOV 19		-5.16	2.09	232.3	-5.16	1.60	205.4	-5.16	1.16	183.6	-5.16	0.76	166.1	-5.16	0.40	151.9	-5.16	0.40	151.9
JAN 10 DEC 3		-5.03	1.82	193.9	-5.03	1.32	168.7	-5.03	0.86	148.6	-5.03	0.46	132.8	-5.03	0.09	120.2	-5.03	0.09	120.2
DEC 22		-4.95	1.66	172.2	-4.95	1.15	148.1	-4.95	0.68	129.2	-4.95	0.27	114.4	-4.95	-0.10	102.7	-4.95	-0.10	102.7
		YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.
		201.413	383.2	190.477	362.4	180.667	343.7	171.972	327.2	164.253	312.5								

NOTE - FOR ASPECTS WITH WEST COMPONENTS, THE TIME AND SIGN OF SR AND SS ARE REVERSED.

LATITUDE 32 N
ASPECT SE - SW

SLOPE																									
10 PCT					20 PCT					30 PCT					40 PCT					50 PCT					
THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	
27.9	4.6	-7.05	6.52	998.2	-7.05	6.15	981.4	-7.05	5.76	960.5	-7.05	5.41	936.4	-7.05	5.09	910.0	-6.97	5.07	912.4	-6.97	5.03	915.0	-6.84	5.03	915.4
JUN 22		-6.97	6.52	989.7	-6.97	6.10	976.0	-6.97	5.72	958.0	-6.97	5.38	936.4	-6.97	5.07	912.4	-6.84	5.03	915.0	-6.84	5.03	915.4	-6.67	5.03	915.4
JUN 1	JUL 12	-6.84	6.41	973.8	-6.84	6.01	965.3	-6.84	5.65	947.3	-6.84	5.32	935.1	-6.84	5.03	915.0	-6.67	5.03	915.0	-6.67	5.03	915.4	-6.46	5.03	915.4
MAY 18	JUL 27	-6.67	6.26	948.6	-6.67	5.89	927.4	-6.67	5.55	909.9	-6.67	5.24	930.0	-6.67	4.97	915.0	-6.46	5.03	915.0	-6.46	5.03	915.4	-6.24	5.03	915.4
MAY 3	AUG 10	-6.46	6.09	912.7	-6.46	5.74	920.0	-6.46	5.43	921.6	-6.46	5.15	918.1	-6.46	4.90	910.2	-6.24	5.03	915.0	-6.24	5.03	915.4	-6.00	5.03	915.4
APR 19	AUG 25	-6.24	5.89	866.2	-6.24	5.58	882.7	-6.24	5.30	893.0	-6.24	5.05	897.5	-6.24	4.82	897.0	-6.00	5.03	915.0	-6.00	5.03	915.4	-5.76	5.03	915.4
APR 4	SEP 9	-6.00	5.70	809.4	-6.00	5.42	834.9	-6.00	5.17	853.9	-6.00	4.95	866.5	-6.00	4.74	873.4	-5.76	5.03	915.0	-5.76	5.03	915.4	-5.54	5.03	915.4
MAR 21	SEP 23	-5.76	5.50	746.2	-5.76	5.25	779.9	-5.76	5.04	806.8	-5.76	4.84	827.0	-5.76	4.66	840.9	-5.54	5.03	915.0	-5.54	5.03	915.4	-5.33	5.03	915.4
MAR 7	OCT 8	-5.54	5.30	681.3	-5.54	5.10	721.9	-5.54	4.91	755.5	-5.54	4.74	782.1	-5.54	4.59	802.1	-5.33	5.03	915.0	-5.33	5.03	915.4	-5.16	5.03	915.4
FEB 20	OCT 22	-5.33	5.13	619.7	-5.33	4.95	665.6	-5.33	4.79	704.4	-5.33	4.65	736.2	-5.33	4.52	761.1	-5.16	5.03	915.0	-5.16	5.03	915.4	-5.03	5.03	915.4
FEB 7	NOV 5	-5.16	4.98	568.0	-5.16	4.83	617.4	-5.16	4.69	660.0	-5.16	4.57	695.5	-5.16	4.46	724.0	-5.03	5.03	915.0	-5.03	5.03	915.4	-4.95	5.03	915.4
JAN 23	NOV 19	-5.03	4.87	530.5	-5.03	4.74	582.2	-5.03	4.62	627.0	-5.03	4.51	664.8	-5.03	4.42	695.6	-4.95	5.03	915.0	-4.95	5.03	915.4	-4.82	5.03	915.4
JAN 10	DEC 3	-4.95	4.81	508.2	-4.95	4.69	561.0	-4.95	4.58	607.1	-4.95	4.48	646.1	-4.95	4.39	678.1	-4.82	5.03	915.0	-4.82	5.03	915.4	-4.66	5.03	915.4
DEC 22		YEAR		R.I.	YEAR		R.I.	YEAR		R.I.	YEAR		R.I.	YEAR		R.I.	YEAR		R.I.	YEAR		R.I.	YEAR		R.I.
		286.775		.5456		294.532		.5604		300.109		.5710		303.595		.5776		305.212		.5807					
SLOPE																									
60 PCT					70 PCT					80 PCT					90 PCT					100 PCT					
THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	
8.4	21.6	-7.05	4.81	882.4	-7.05	4.55	854.5	-7.05	4.32	827.0	-7.05	4.11	800.5	-7.05	3.92	775.2	-6.97	3.92	785.3	-6.97	3.93	801.2	-6.84	3.93	801.2
JUN 22		-6.97	4.79	886.8	-6.97	4.54	860.7	-6.97	4.31	834.7	-6.97	4.11	809.6	-6.97	3.92	785.3	-6.84	3.93	801.2	-6.84	3.93	801.2	-6.67	3.93	801.2
JUN 1	JUL 12	-6.84	4.76	892.9	-6.84	4.52	865.8	-6.84	4.30	846.5	-6.84	4.11	823.5	-6.84	3.94	820.5	-6.67	3.93	801.2	-6.67	3.93	801.2	-6.46	3.93	801.2
MAY 18	JUL 27	-6.67	4.72	898.3	-6.67	4.49	875.4	-6.67	4.29	859.8	-6.67	4.11	840.0	-6.67	3.96	838.4	-6.46	3.96	838.4	-6.46	3.96	838.4	-6.24	3.96	838.4
MAY 3	AUG 10	-6.46	4.67	899.0	-6.46	4.46	885.4	-6.46	4.28	870.4	-6.46	4.11	854.6	-6.46	3.98	851.1	-6.24	3.98	851.1	-6.24	3.98	851.1	-6.00	3.98	851.1
APR 19	AUG 25	-6.24	4.62	892.4	-6.24	4.43	884.6	-6.24	4.27	874.7	-6.24	4.12	863.3	-6.24	4.00	854.5	-6.00	4.00	854.5	-6.00	4.00	854.5	-5.76	4.00	854.5
APR 4	SEP 9	-6.00	4.56	875.5	-6.00	4.40	873.8	-6.00	4.25	869.2	-6.00	4.12	862.5	-6.00	4.02	848.0	-5.76	4.02	848.0	-5.76	4.02	848.0	-5.54	4.02	848.0
MAR 21	SEP 23	-5.76	4.51	849.4	-5.76	4.36	853.5	-5.76	4.24	854.1	-5.76	4.12	852.0	-5.76	4.03	832.7	-5.54	4.03	832.7	-5.54	4.03	832.7	-5.33	4.03	832.7
MAR 7	OCT 8	-5.54	4.45	816.5	-5.54	4.33	825.5	-5.54	4.22	830.8	-5.54	4.12	832.9	-5.54	4.05	811.2	-5.33	4.05	811.2	-5.33	4.05	811.2	-5.16	4.05	811.2
FEB 20	OCT 22	-5.33	4.40	779.9	-5.33	4.30	793.4	-5.33	4.21	802.5	-5.33	4.13	808.2	-5.33	4.06	788.9	-5.16	4.06	788.9	-5.16	4.06	788.9	-5.03	4.06	788.9
FEB 7	NOV 5	-5.16	4.36	746.2	-5.16	4.28	762.9	-5.16	4.20	775.0	-5.16	4.13	783.4	-5.16	4.07	770.3	-5.03	4.07	770.3	-5.03	4.07	770.3	-4.95	4.07	770.3
JAN 23	NOV 19	-5.03	4.33	720.0	-5.03	4.26	738.9	-5.03	4.19	753.0	-5.03	4.13	763.2	-5.03	4.08	756.3	-4.95	4.08	756.3	-4.95	4.08	756.3	-4.82	4.08	756.3
JAN 10	DEC 3	-4.95	4.32	703.8	-4.95	4.25	723.8	-4.95	4.19	738.9	-4.95	4.13	750.2	-4.95	4.07	745.0	-4.82	4.07	745.0	-4.82	4.07	745.0	-4.66	4.07	745.0
DEC 22		YEAR		R.I.	YEAR		R.I.	YEAR		R.I.	YEAR		R.I.	YEAR		R.I.	YEAR		R.I.	YEAR		R.I.	YEAR		R.I.
		305.268		.5808		304.095		.5786		302.013		.5746		299.300		.5694		296.156		.5635					

NOTE - FOR ASPECTS WITH WEST COMPONENTS, THE TIME AND SIGN OF SR AND SS ARE REVERSED.

LATITUDE 32 N
ASPECT ENE - WNW

		10 PCT				20 PCT				30 PCT				40 PCT				50 PCT			
		THETA	ALPHA	SR	SS	LY	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA
		34.0	6.4				35.7	12.9		36.9	19.4				37.8	25.7				38.3	31.7
		YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.
		270.620	.5149	263.460	.5013	255.836	.4867	248.064	.4720	240.416	.4574	233.091	.4435	226.198	.4304	219.811	.4182	213.952	.4071	208.561	.3968
JUN 22		-7.05	6.71	1011.9		-7.05	6.35	1006.3		-7.05	5.98	994.7		-7.05	5.60	978.6		-7.05	5.22	959.3	
JUN 1 JUL 12		-6.97	6.63	998.5		-6.97	6.26	991.5		-6.97	5.88	978.9		-6.97	5.50	962.1		-6.97	5.12	942.4	
MAY 18 JUL 27		-6.84	6.49	974.4		-6.84	6.11	965.2		-6.84	5.73	951.0		-6.84	5.35	933.0		-6.84	4.95	912.7	
MAY 3 AUG 10		-6.67	6.30	937.9		-6.67	5.91	925.8		-6.67	5.51	909.4		-6.67	5.12	890.0		-6.67	4.73	868.9	
APR 19 AUG 25		-6.46	6.07	888.6		-6.46	5.67	873.1		-6.46	5.26	858.3		-6.46	4.86	833.4		-6.46	4.47	811.5	
APR 4 SEP 9		-6.24	5.83	828.2		-6.24	5.41	809.2		-6.24	4.99	788.0		-6.24	4.58	765.7		-6.24	4.18	743.5	
MAR 21 SEP 23		-6.00	5.57	757.7		-6.00	5.14	735.5		-6.00	4.71	712.3		-6.00	4.28	689.0		-6.00	3.88	666.3	
MAR 7 OCT 8		-5.76	5.32	682.3		-5.76	4.87	657.5		-5.76	4.42	632.7		-5.76	3.99	608.8		-5.76	3.59	586.3	
FEB 20 OCT 22		-5.54	5.08	607.5		-5.54	4.61	580.7		-5.54	4.15	555.0		-5.54	3.71	531.0		-5.54	3.30	509.1	
FEB 7 NOV 5		-5.33	4.85	538.6		-5.33	4.37	510.5		-5.33	3.90	484.4		-5.33	3.45	460.7		-5.33	3.04	439.5	
JAN 23 NOV 19		-5.16	4.66	481.9		-5.16	4.17	453.2		-5.16	3.69	427.0		-5.16	3.23	403.8		-5.16	2.81	383.5	
JAN 10 DEC 3		-5.03	4.52	441.6		-5.03	4.02	412.6		-5.03	3.53	386.6		-5.03	3.07	363.8		-5.03	2.65	344.2	
DEC 22		-4.95	4.44	417.9		-4.95	3.93	388.8		-4.95	3.44	363.0		-4.95	2.97	340.6		-4.95	2.55	321.4	
JUN 22		-7.05	4.85	938.5		-7.05	4.51	916.9		-7.05	4.18	895.6		-7.05	3.89	875.1		-7.05	3.61	855.5	
JUN 1 JUL 12		-6.97	4.75	921.3		-6.97	4.41	899.8		-6.97	4.08	878.5		-6.97	3.79	858.2		-6.97	3.52	838.8	
MAY 18 JUL 27		-6.84	4.59	891.3		-6.84	4.24	869.7		-6.84	3.92	848.6		-6.84	3.63	828.5		-6.84	3.36	809.5	
MAY 3 AUG 10		-6.67	4.36	847.1		-6.67	4.02	825.8		-6.67	3.70	804.9		-6.67	3.41	785.3		-6.67	3.14	766.8	
APR 19 AUG 25		-6.46	4.10	789.6		-6.46	3.75	768.3		-6.46	3.44	748.1		-6.46	3.15	729.2		-6.46	2.89	711.6	
APR 4 SEP 9		-6.24	3.81	721.4		-6.24	3.47	700.6		-6.24	3.15	681.2		-6.24	2.87	663.3		-6.24	2.61	646.8	
MAR 21 SEP 23		-6.00	3.51	644.9		-6.00	3.17	624.9		-6.00	2.86	606.6		-6.00	2.58	589.9		-6.00	2.33	574.6	
MAR 7 OCT 8		-5.76	3.21	565.6		-5.76	2.87	546.7		-5.76	2.56	529.7		-5.76	2.29	514.3		-5.76	2.04	500.5	
FEB 20 OCT 22		-5.54	2.92	489.3		-5.54	2.58	471.6		-5.54	2.28	456.0		-5.54	2.01	442.1		-5.54	1.77	429.7	
FEB 7 NOV 5		-5.33	2.66	420.9		-5.33	2.32	404.5		-5.33	2.02	390.2		-5.33	1.75	377.8		-5.33	1.51	366.7	
JAN 23 NOV 19		-5.16	2.43	365.9		-5.16	2.09	350.7		-5.16	1.79	337.6		-5.16	1.53	326.3		-5.16	1.30	316.5	
JAN 10 DEC 3		-5.03	2.27	327.5		-5.03	1.93	313.2		-5.03	1.63	301.0		-5.03	1.37	290.6		-5.03	1.14	281.5	
DEC 22		-4.95	2.17	305.2		-4.95	1.83	291.5		-4.95	1.53	279.8		-4.95	1.27	269.9		-4.95	1.05	261.4	

NOTE - FOR ASPECTS WITH WEST COMPONENTS, THE TIME AND SIGN OF SR AND SS ARE REVERSED.

IF THIS MATERIAL WAS RECEIVED DAMAGED,
PLEASE NOTIFY US IMMEDIATELY.

THANK YOU.

VIRGINIA COMMONWEALTH UNIVERSITY
INTERLIBRARY LOAN OFFICE
901 PARK AVENUE, BOX 842033
RICHMOND, VA 23284-2033
(804) 828-1115 OFFICE
(804) 828-1730 FAX
JEANNE SCOTT OR VALARIE SHORE

LATITUDE 32 N
ASPECT ESE - WSW

		10 PCT				20 PCT				SLOPE				30 PCT				40 PCT				50 PCT					
		THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	
		29.7	6.1				27.1	11.8				24.5	17.0				21.8	21.7				19.2	25.9				
				SR	SS	LY			SR	SS	LY			SR	SS	LY			SR	SS	LY			SR	SS	LY	
JUN 22		-7.05	6.55	1003.0			-7.05	6.07	991.6			-7.05	5.63	976.7			-7.05	5.22	959.1			-7.05	4.85	939.4			
JUN 1 JUL 12		-6.97	6.48	993.0			-6.97	6.01	983.4			-6.97	5.57	970.3			-6.97	5.17	954.2			-6.97	4.81	936.1			
MAY 18 JUL 27		-6.84	6.36	974.7			-6.84	5.91	968.1			-6.84	5.48	957.9			-6.84	5.09	944.6			-6.84	4.74	928.9			
MAY 3 AUG 10		-6.67	6.20	946.2			-6.67	5.76	943.8			-6.67	5.36	937.6			-6.67	4.98	928.0			-6.67	4.64	915.8			
APR 19 AUG 25		-6.46	6.02	906.2			-6.46	5.59	908.8			-6.46	5.21	907.4			-6.46	4.85	902.4			-6.46	4.53	894.4			
APR 4 SEP 9		-6.24	5.81	855.6			-6.24	5.41	853.4			-6.24	5.04	867.2			-6.24	4.70	867.1			-6.24	4.40	863.6			
MAR 21 SEP 23		-6.00	5.59	794.6			-6.00	5.22	807.7			-6.00	4.87	816.5			-6.00	4.55	821.3			-6.00	4.27	822.5			
MAR 7 OCT 8		-5.76	5.38	727.7			-5.76	5.02	745.5			-5.76	4.70	759.0			-5.76	4.40	768.3			-5.76	4.14	773.7			
FEB 20 OCT 22		-5.54	5.17	659.8			-5.54	4.84	681.4			-5.54	4.53	698.9			-5.54	4.26	712.1			-5.54	4.01	721.2			
FEB 7 NOV 5		-5.33	4.99	595.9			-5.33	4.67	620.5			-5.33	4.38	641.1			-5.33	4.13	657.3			-5.33	3.90	669.4			
JAN 23 NOV 19		-5.16	4.83	542.6			-5.16	4.53	569.3			-5.16	4.26	591.9			-5.16	4.02	610.3			-5.16	3.80	624.5			
JAN 10 DEC 3		-5.03	4.71	504.2			-5.03	4.42	532.1			-5.03	4.16	556.1			-5.03	3.93	575.8			-5.03	3.73	591.4			
DEC 22		-4.95	4.64	481.4			-4.95	4.36	510.0			-4.95	4.11	534.6			-4.95	3.89	555.1			-4.95	3.69	571.3			
		YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.
		282.158	.5368	285.997	.5441	288.401	.5487	289.428	.5507	289.229	.5503																
		60 PCT				70 PCT				SLOPE				80 PCT				90 PCT				100 PCT					
		THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	
		16.7	29.8				14.4	33.2				12.2	36.2				10.2	38.9				8.4	41.3				
				SR	SS	LY			SR	SS	LY			SR	SS	LY			SR	SS	LY			SR	SS	LY	
JUN 22		-7.05	4.52	918.6			-7.05	4.22	897.4			-7.05	3.95	876.3			-7.05	3.71	855.7			-7.05	3.49	835.9			
JUN 1 JUL 12		-6.97	4.48	916.6			-6.97	4.18	896.5			-6.97	3.92	876.4			-6.97	3.68	856.7			-6.97	3.47	837.7			
MAY 18 JUL 27		-6.84	4.42	911.7			-6.84	4.13	893.6			-6.84	3.88	875.2			-6.84	3.65	857.1			-6.84	3.44	839.3			
MAY 3 AUG 10		-6.67	4.34	901.7			-6.67	4.00	886.4			-6.67	3.82	870.4			-6.67	3.60	854.4			-6.67	3.40	838.6			
APR 19 AUG 25		-6.46	4.24	884.0			-6.46	3.98	872.1			-6.46	3.75	859.1			-6.46	3.54	845.8			-6.46	3.35	832.2			
APR 4 SEP 9		-6.24	4.13	857.4			-6.24	3.89	849.2			-6.24	3.67	839.6			-6.24	3.47	829.1			-6.24	3.30	818.2			
MAR 21 SEP 23		-6.00	4.02	820.5			-6.00	3.79	816.1			-6.00	3.59	802.0			-6.00	3.41	802.6			-6.00	3.25	794.4			
MAR 7 OCT 8		-5.76	3.90	775.8			-5.76	3.69	775.0			-5.76	3.51	772.2			-5.76	3.34	767.8			-5.76	3.19	762.3			
FEB 20 OCT 22		-5.54	3.80	726.7			-5.54	3.60	729.2			-5.54	3.43	725.3			-5.54	3.27	727.7			-5.54	3.14	724.6			
FEB 7 NOV 5		-5.33	3.70	677.7			-5.33	3.52	682.8			-5.33	3.36	685.4			-5.33	3.22	686.0			-5.33	3.09	685.0			
JAN 23 NOV 19		-5.16	3.61	634.9			-5.16	3.45	642.0			-5.16	3.30	646.4			-5.16	3.17	648.7			-5.16	3.05	649.3			
JAN 10 DEC 3		-5.03	3.55	603.1			-5.03	3.39	611.5			-5.03	3.25	617.1			-5.03	3.13	620.5			-5.03	3.02	622.1			
DEC 22		-4.95	3.52	583.8			-4.95	3.36	592.9			-4.95	3.23	599.1			-4.95	3.11	603.1			-4.95	3.00	605.4			
		YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.
		288.018	.5480	286.023	.5442	285.468	.5393	280.549	.5338	277.393	.5278																

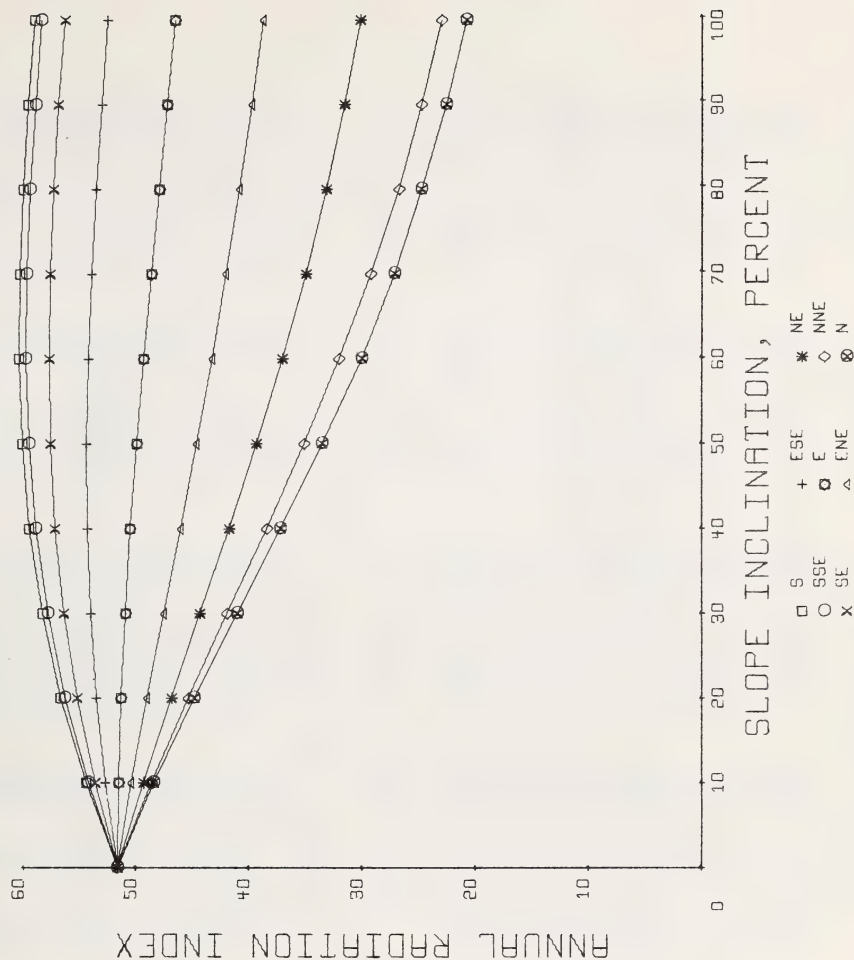
NOTE - FOR ASPECTS WITH WEST COMPONENTS, THE TIME AND SIGN OF SR AND SS ARE REVERSED.

LATITUDE 32 N
ASPECT E - W

		SLOPE																				
		10 PCT			20 PCT			30 PCT			40 PCT			50 PCT								
		THETA	ALPHA	LY	THETA	ALPHA	LY	THETA	ALPHA	LY	THETA	ALPHA	LY	THETA	ALPHA	LY	THETA	ALPHA	LY	THETA	ALPHA	LY
		SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY
JUN 22		-7.05	6.59	1007.7	-7.05	6.14	1000.1	-7.05	5.69	988.4	-7.05	5.27	973.5	-7.05	4.87	956.5	-7.05	4.47	940.6	-7.05	4.07	924.7
JUN 1 JUL 12		-6.97	6.52	996.0	-6.97	6.06	988.7	-6.97	5.62	977.4	-6.97	5.20	963.0	-6.97	4.80	946.6	-6.97	4.40	930.7	-6.97	4.00	914.8
MAY 18 JUL 27		-6.84	6.39	974.8	-6.84	5.94	968.0	-6.84	5.50	957.4	-6.84	5.08	943.9	-6.84	4.69	928.4	-6.84	4.29	912.5	-6.84	3.89	900.1
MAY 3 AUG 10		-6.67	6.22	942.4	-6.67	5.77	936.2	-6.67	5.33	926.6	-6.67	4.92	913.3	-6.67	4.54	900.1	-6.67	4.14	884.2	-6.67	3.74	868.3
APR 19 AUG 25		-6.46	6.01	897.8	-6.46	5.56	892.4	-6.46	5.14	884.1	-6.46	4.73	873.3	-6.46	4.36	860.8	-6.46	3.96	844.9	-6.46	3.56	829.0
APR 4 SEP 9		-6.24	5.79	842.3	-6.24	5.34	837.8	-6.24	4.92	830.8	-6.24	4.53	821.8	-6.24	4.17	811.1	-6.24	3.81	795.2	-6.24	3.41	779.3
MAR 21 SEP 23		-6.00	5.55	776.6	-6.00	5.11	773.1	-6.00	4.70	767.6	-6.00	4.32	760.3	-6.00	3.96	751.6	-6.00	3.60	735.7	-6.00	3.24	720.8
MAR 7 OCT 8		-5.76	5.32	705.4	-5.76	4.89	702.9	-5.76	4.48	698.8	-5.76	4.10	693.2	-5.76	3.76	686.5	-5.76	3.40	670.6	-5.76	3.04	654.7
FEB 20 OCT 22		-5.54	5.09	634.0	-5.54	4.67	632.4	-5.54	4.27	629.6	-5.54	3.90	625.6	-5.54	3.57	620.6	-5.54	3.21	604.7	-5.54	2.85	588.8
FEB 7 NOV 5		-5.33	4.89	567.6	-5.33	4.46	566.7	-5.33	4.07	564.9	-5.33	3.71	562.3	-5.33	3.39	558.8	-5.33	3.03	542.9	-5.33	2.67	527.0
JAN 23 NOV 19		-5.16	4.71	512.5	-5.16	4.29	512.2	-5.16	3.91	511.3	-5.16	3.55	509.7	-5.16	3.24	507.4	-5.16	2.88	491.5	-5.16	2.52	475.6
JAN 10 DEC 3		-5.03	4.58	473.1	-5.03	4.17	473.2	-5.03	3.78	472.8	-5.03	3.44	471.9	-5.03	3.13	470.4	-5.03	2.77	454.5	-5.03	2.41	438.6
DEC 22		-4.95	4.51	449.9	-4.95	4.09	450.1	-4.95	3.71	450.1	-4.95	3.37	449.6	-4.95	3.06	448.5	-4.95	2.70	432.6	-4.95	2.34	416.7
		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.	
		276.506	.5261		275.178	.5236		273.065	.5195		270.291	.5143		267.007	.5080		264.233	.5028		261.459	.4976	
		60 PCT			70 PCT			80 PCT			90 PCT			100 PCT								
		THETA	ALPHA	LY	THETA	ALPHA	LY	THETA	ALPHA	LY	THETA	ALPHA	LY	THETA	ALPHA	LY	THETA	ALPHA	LY	THETA	ALPHA	LY
		SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY
JUN 22		-7.05	4.50	938.3	-7.05	4.17	919.6	-7.05	3.87	900.9	-7.05	3.60	882.7	-7.05	3.36	865.2	-7.05	3.12	847.7	-7.05	2.88	830.2
JUN 1 JUL 12		-6.97	4.44	928.9	-6.97	4.11	910.7	-6.97	3.82	892.6	-6.97	3.55	874.9	-6.97	3.31	857.8	-6.97	3.07	840.3	-6.97	2.83	822.8
MAY 18 JUL 27		-6.84	4.34	911.7	-6.84	4.01	894.4	-6.84	3.72	877.2	-6.84	3.46	860.3	-6.84	3.22	844.0	-6.84	2.98	826.5	-6.84	2.74	809.0
MAY 3 AUG 10		-6.67	4.19	884.8	-6.67	3.88	868.9	-6.67	3.60	852.9	-6.67	3.34	837.3	-6.67	3.12	822.1	-6.67	2.88	804.6	-6.67	2.64	787.1
APR 19 AUG 25		-6.46	4.02	847.1	-6.46	3.72	832.9	-6.46	3.45	818.6	-6.46	3.20	804.4	-6.46	2.98	790.7	-6.46	2.74	773.2	-6.46	2.50	755.7
APR 4 SEP 9		-6.24	3.84	799.4	-6.24	3.55	787.1	-6.24	3.28	774.6	-6.24	3.05	762.2	-6.24	2.84	750.0	-6.24	2.60	732.5	-6.24	2.36	715.0
MAR 21 SEP 23		-6.00	3.65	741.9	-6.00	3.36	731.6	-6.00	3.11	721.1	-6.00	2.89	710.5	-6.00	2.69	700.1	-6.00	2.45	682.6	-6.00	2.21	665.1
MAR 7 OCT 8		-5.76	3.46	678.8	-5.76	3.18	670.6	-5.76	2.94	661.9	-5.76	2.73	653.2	-5.76	2.53	644.6	-5.76	2.29	627.1	-5.76	2.05	609.6
FEB 20 OCT 22		-5.54	3.27	614.8	-5.54	3.01	608.4	-5.54	2.78	601.5	-5.54	2.57	594.5	-5.54	2.37	585.9	-5.54	2.13	568.4	-5.54	1.89	550.9
FEB 7 NOV 5		-5.33	3.10	554.6	-5.33	2.85	549.7	-5.33	2.63	544.4	-5.33	2.43	538.9	-5.33	2.26	533.2	-5.33	2.02	515.7	-5.33	1.78	500.0
JAN 23 NOV 19		-5.16	2.96	504.3	-5.16	2.71	500.7	-5.16	2.50	496.6	-5.16	2.31	492.2	-5.16	2.14	487.5	-5.16	1.90	469.9	-5.16	1.66	452.4
JAN 10 DEC 3		-5.03	2.86	468.1	-5.03	2.62	465.3	-5.03	2.41	462.0	-5.03	2.22	458.3	-5.03	2.06	454.5	-5.03	1.82	437.0	-5.03	1.58	419.5
DEC 22		-4.95	2.79	446.7	-4.95	2.56	444.3	-4.95	2.35	441.4	-4.95	2.17	438.2	-4.95	2.01	434.8	-4.95	1.77	417.3	-4.95	1.53	400.8
		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.	
		263.370	.5011		259.518	.4938		255.581	.4863		251.664	.4788		247.804	.4715		243.944	.4640		240.084	.4565	

NOTE - FOR ASPECTS WITH WEST COMPONENTS, THE TIME AND SIGN OF SR AND SS ARE REVERSED.

RADIATION INDEXES FOR VARIOUS FACETS AT LATITUDE 34 N



HORIZONTAL SURFACE

LATITUDE 34 N

	SR	SS	LY
JUN 22	-7.14	7.14	1014.8
JUN 1 JUL 12	-7.05	7.05	1001.4
MAY 18 JUL 27	-6.91	6.91	977.2
MAY 3 AUG 10	-6.72	6.72	940.8
APR 19 AUG 25	-6.50	6.50	891.4
APR 4 SEP 9	-6.25	6.25	830.9
MAR 21 SEP 23	-6.00	6.00	760.3
MAR 7 OCT 8	-5.75	5.75	684.8
FEB 20 OCT 22	-5.50	5.50	609.8
FEB 7 NOV 5	-5.28	5.28	540.7
JAN 23 NOV 19	-5.09	5.09	483.9
JAN 10 DEC 3	-4.95	4.95	443.4
DEC 22	-4.86	4.86	419.7

YEAR R.I.
271.525 .5166

LATITUDE 34 N
ASPECT N -

	SLOPE										R.I.															
	10 PCT					20 PCT					30 PCT					40 PCT					50 PCT					
	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	
JUN 22	39.7	0.0	-7.14	7.14	1021.0	-7.14	7.14	1017.3	-7.14	7.14	1004.5	-7.14	7.14	984.2	-7.14	7.14	958.2	-7.14	7.14	958.2	60.6	0.0	-7.05	7.05	924.9	
JUN 1	7.05	1.05	1002.9	-6.91	6.91	971.0	-6.91	6.91	955.7	-6.91	6.91	931.9	-6.91	6.91	902.1	-6.91	6.91	867.7	-6.91	6.91	867.7	60.6	0.0	-6.91	6.91	824.9
MAY 18	6.72	923.8	-6.72	6.72	923.8	-6.72	6.72	898.4	-6.72	6.72	865.8	-6.72	6.72	827.8	-6.72	6.72	786.5	-6.72	6.72	786.5	60.6	0.0	-6.72	6.72	743.8	
MAY 3	6.50	6.50	862.1	-6.50	6.50	825.0	-6.50	6.50	781.9	-6.50	6.50	739.4	-6.50	6.50	698.9	-6.50	6.50	657.6	-6.50	6.50	657.6	60.6	0.0	-6.50	6.50	614.9
APR 19	6.25	6.25	788.5	-6.25	6.25	739.4	-6.25	6.25	698.9	-6.25	6.25	657.6	-6.25	6.25	614.9	-6.25	6.25	573.6	-6.25	6.25	573.6	60.6	0.0	-6.25	6.25	530.9
APR 4	6.00	6.00	705.4	-6.00	6.00	644.9	-6.00	6.00	580.9	-6.00	6.00	539.6	-6.00	6.00	498.3	-6.00	6.00	457.0	-6.00	6.00	457.0	60.6	0.0	-6.00	6.00	414.9
MAR 21	5.69	5.69	619.0	-5.62	5.62	548.9	-5.54	5.54	476.7	-5.46	5.46	404.7	-5.38	5.38	332.7	-5.30	5.30	260.7	-5.22	5.22	260.7	60.6	0.0	-5.22	5.22	217.9
MAR 7	5.39	5.39	535.6	-5.25	5.25	458.5	-5.09	5.09	381.1	-4.91	4.91	309.1	-4.73	4.73	237.1	-4.55	4.55	165.1	-4.37	4.37	165.1	60.6	0.0	-4.37	4.37	122.9
FEB 20	5.11	5.11	460.5	-4.91	4.91	379.1	-4.67	4.67	299.4	-4.43	4.43	226.6	-4.19	4.19	153.6	-3.95	3.95	89.6	-3.71	3.71	89.6	60.6	0.0	-3.71	3.71	46.9
FEB 7	4.87	4.87	400.1	-4.61	4.61	316.6	-4.31	4.31	236.6	-4.03	4.03	194.4	-3.73	3.73	122.1	-3.45	3.45	58.1	-3.17	3.17	58.1	60.6	0.0	-3.17	3.17	14.9
JAN 23	4.69	4.69	357.8	-4.40	4.40	273.7	-4.03	4.03	194.4	-3.73	3.73	122.1	-3.45	3.45	58.1	-3.17	3.17	58.1	-2.89	2.89	58.1	60.6	0.0	-2.89	2.89	14.9
JAN 10	4.49	4.49	333.2	-4.26	4.26	249.1	-3.86	3.86	170.8	-3.56	3.56	101.4	-3.26	3.26	26.4	-2.96	2.96	26.4	-2.66	2.66	26.4	60.6	0.0	-2.66	2.66	14.9
DEC 22	4.29	4.29	318.6	-4.02	4.02	234.6	-3.66	3.66	146.2	-3.36	3.36	71.8	-3.06	3.06	22.2	-2.76	2.76	22.2	-2.46	2.46	22.2	60.6	0.0	-2.46	2.46	14.9
YEAR	254.414	4840	235.517	4481	215.630	4103	195.546	3720	176.078	3350	158.061	3007	142.687	2715	129.800	2470	118.722	2255.931	2073	186.931	168.931	148.931	128.931	108.931	88.931	

NOTE - FOR ASPECTS WITH WEST COMPONENTS, THE TIME AND SIGN OF SR AND SS ARE REVERSED.

LATITUDE 34 N
ASPECT S -

	SLOPE										SLOPE										SLOPE									
	10 PCT					20 PCT					30 PCT					40 PCT					50 PCT									
	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY					
JUN 22	-6.90	6.90	991.0			-6.70	6.70	977.7			-6.52	6.52	949.5			-6.36	6.36	916.5			-6.22	6.22	880.2							
JUN 12	-6.84	6.84	991.0			-6.65	6.65	973.2			-6.48	6.48	949.0			-6.33	6.33	919.6			-6.20	6.20	886.5							
JUN 18	-6.73	6.73	978.7			-6.56	6.56	964.3			-6.42	6.42	946.8			-6.29	6.29	923.1			-6.17	6.17	895.9							
MAY 3	-6.58	6.58	948.9			-6.45	6.45	948.7			-6.33	6.33	940.7			-6.23	6.23	926.1			-6.14	6.14	906.4							
AUG 10	-6.50	6.50	948.9			-6.31	6.31	924.3			-6.23	6.23	927.9			-6.16	6.16	924.1			-6.10	6.10	918.2							
APR 19	-6.40	6.40	912.2			-6.31	6.31	924.3			-6.23	6.23	927.9			-6.16	6.16	924.1			-6.10	6.10	918.2							
APR 4	-6.20	6.20	865.1			-6.16	6.16	890.4			-6.12	6.12	906.8			-6.08	6.08	915.0			-6.05	6.05	916.2							
MAR 21	-6.00	6.00	807.6			-6.00	6.00	846.2			-6.00	6.00	875.6			-6.00	6.00	896.4			-6.00	6.00	909.4							
SEP 23																														
MAR 7	-5.75	5.75	743.8			-5.75	5.75	794.4			-5.75	5.75	835.9			-5.75	5.75	868.5			-5.75	5.75	892.7							
OCT 8																														
FEB 20	-5.50	5.50	678.3			-5.50	5.50	738.8			-5.50	5.50	790.4			-5.50	5.50	832.8			-5.50	5.50	866.5							
OCT 22																														
FEB 7	-5.28	5.28	616.1			-5.28	5.28	684.1			-5.28	5.28	743.3			-5.28	5.28	795.6			-5.28	5.28	838.4							
NOV 5																														
JAN 23	-5.09	5.09	563.9			-5.09	5.09	636.9			-5.09	5.09	701.3			-5.09	5.09	756.3			-5.09	5.09	802.9							
NOV 19																														
JAN 10	-4.95	4.95	526.1			-4.95	4.95	602.0			-4.95	4.95	669.5			-4.95	4.95	728.1			-4.95	4.95	777.6							
DEC 3																														
JAN 10	-4.86	4.86	503.6			-4.86	4.86	580.9			-4.86	4.86	650.0			-4.86	4.86	710.3			-4.86	4.86	761.5							
DEC 22																														
	YEAR	R.I.e				YEAR	R.I.e				YEAR	R.I.e				YEAR	R.I.e				YEAR	R.I.e								
	286.193	5.445				298.008	5.570				306.852	5.588				312.869	5.593				316.363	5.601								

NOTE - FOR ASPECTS WITH WEST COMPONENTS, THE TIME AND SIGN OF SR AND SS ARE REVERSED.

LATITUDE 34 N
ASPECT NNE - NNW

SLOPE																									
10 PCT					20 PCT					30 PCT					40 PCT					50 PCT					
THETA		ALPHA		LY	THETA		ALPHA		LY	THETA		ALPHA		LY	THETA		ALPHA		LY	THETA		ALPHA		LY	
39.3	2.8				44.3	6.0				49.1	9.7				53.5	13.8				57.4	18.5				
JUN 22		-7.14	7.14	1020.2	-7.14	7.14	1015.6	-7.14	7.14	1002.0	-7.14	7.14	981.0	-7.14	7.14	954.4	-7.14	7.14	922.7	-7.14	7.14	891.0	-7.14	7.14	859.4
JUN 1 JUL 12		-7.05	7.05	1002.4	-7.05	7.05	993.7	-7.05	7.05	976.5	-7.05	7.05	952.2	-7.05	7.05	922.2	-7.05	7.05	892.5	-7.05	7.05	862.8	-7.05	7.05	833.1
MAY 18 JUL 27		-6.91	6.91	971.1	-6.91	6.91	955.7	-6.91	6.91	932.2	-6.91	6.91	908.6	-6.91	6.91	884.6	-6.91	6.91	860.6	-6.91	6.91	836.6	-6.91	6.91	812.6
MAY 3 AUG 10		-6.72	6.69	924.8	-6.72	6.65	900.2	-6.72	6.61	878.6	-6.72	6.55	854.6	-6.72	6.40	830.6	-6.72	6.25	806.6	-6.72	6.10	782.6	-6.72	5.95	758.6
APR 19 AUG 25		-6.50	6.42	864.1	-6.50	6.32	829.1	-6.50	6.21	788.2	-6.50	6.09	743.3	-6.50	5.94	696.3	-6.50	5.79	663.7	-6.50	5.63	631.1	-6.50	5.47	597.5
APR 4 SEP 9		-6.25	6.12	791.7	-6.25	5.97	746.0	-6.25	5.79	696.1	-6.25	5.63	643.7	-6.25	5.47	591.1	-6.25	5.31	548.5	-6.25	5.15	505.9	-6.25	4.99	463.3
MAR 21 SEP 23		-6.00	5.81	709.8	-6.00	5.60	654.4	-6.00	5.36	596.4	-6.00	5.08	537.9	-6.00	4.76	480.9	-6.00	4.48	430.9	-6.00	4.14	373.4	-6.00	3.79	316.9
MAR 7 OCT 8		-5.75	5.50	624.4	-5.75	5.23	560.9	-5.75	4.92	496.6	-5.75	4.57	433.8	-5.75	4.17	374.5	-5.75	3.75	312.7	-5.75	3.29	260.9	-5.75	2.87	210.1
FEB 20 OCT 22		-5.50	5.21	541.8	-5.50	4.87	472.2	-5.50	4.50	403.7	-5.50	4.07	338.7	-5.50	3.59	279.1	-5.50	3.08	220.1	-5.50	2.54	161.1	-5.50	1.95	102.1
FEB 7 NOV 5		-5.28	4.93	467.2	-5.28	4.54	393.8	-5.28	4.10	323.2	-5.28	3.60	257.8	-5.28	3.04	194.0	-5.28	2.45	140.0	-5.28	1.81	91.0	-5.28	1.12	41.0
JAN 23 NOV 19		-5.08	4.70	407.0	-5.07	4.26	331.6	-5.05	3.76	260.4	-5.04	3.19	195.9	-5.02	2.54	140.6	-5.00	1.85	91.6	-5.00	1.16	42.6	-5.00	0.47	-7.4
JAN 10 DEC 3		-4.91	4.53	364.8	-4.86	4.05	288.6	-4.80	3.51	217.9	-4.72	2.88	154.9	-4.63	2.15	101.6	-4.50	1.40	62.6	-4.40	0.65	23.6	-4.30	-0.08	-24.6
DEC 22		-4.80	4.42	340.3	-4.73	3.92	264.0	-4.64	3.35	193.8	-4.52	2.68	132.2	-4.38	1.90	81.0	-4.20	1.12	62.6	-4.10	0.37	23.6	-4.00	-0.38	-25.6
SLOPE																									
60 PCT					70 PCT					80 PCT					90 PCT					100 PCT					
THETA		ALPHA		LY	THETA		ALPHA		LY	THETA		ALPHA		LY	THETA		ALPHA		LY	THETA		ALPHA		LY	
60.9	23.9				63.8	29.8				66.2	36.4				68.1	43.4				69.6	50.8				
JUN 22		-7.14	7.14	923.9	-7.14	7.14	891.2	-7.14	7.14	857.6	-7.14	7.14	824.2	-7.14	7.14	791.4	-7.14	7.14	758.8	-7.14	7.14	726.2	-7.14	7.14	693.6
JUN 1 JUL 12		-7.05	7.05	889.7	-7.05	7.05	854.9	-7.05	7.05	819.6	-7.05	7.05	784.8	-7.05	7.05	750.0	-7.05	7.05	715.2	-7.05	7.05	680.4	-7.05	7.05	645.6
MAY 18 JUL 27		-6.91	6.91	831.2	-6.91	6.91	793.0	-6.91	6.91	754.8	-6.91	6.91	716.6	-6.91	6.91	678.4	-6.91	6.91	640.2	-6.91	6.91	602.0	-6.91	6.91	563.8
MAY 3 AUG 10		-6.72	6.41	748.8	-6.72	6.31	706.4	-6.72	6.19	664.8	-6.72	6.04	623.1	-6.72	5.88	581.5	-6.72	5.72	539.9	-6.72	5.56	498.3	-6.72	5.40	456.7
APR 19 AUG 25		-6.50	5.76	649.1	-6.50	5.55	602.9	-6.50	5.31	558.9	-6.50	5.02	517.9	-6.50	4.86	475.9	-6.50	4.70	433.9	-6.50	4.54	391.9	-6.50	4.38	350.3
APR 4 SEP 9		-6.25	5.09	539.8	-6.25	4.78	491.1	-6.25	4.44	446.1	-6.25	4.05	401.1	-6.25	3.66	356.1	-6.25	3.27	311.1	-6.25	2.88	266.1	-6.25	2.49	221.1
MAR 21 SEP 23		-6.00	4.41	427.2	-6.00	4.01	377.9	-6.00	3.57	333.7	-6.00	3.11	295.0	-6.00	2.65	251.5	-6.00	2.19	207.0	-6.00	1.73	162.5	-6.00	1.27	118.0
MAR 7 OCT 8		-5.75	3.73	320.3	-5.75	3.24	272.1	-5.75	2.71	230.4	-5.75	2.16	185.4	-5.75	1.60	140.4	-5.75	1.04	95.4	-5.75	0.48	50.4	-5.75	-0.08	5.4
FEB 20 OCT 22		-5.50	3.06	226.2	-5.50	2.47	180.9	-5.50	1.84	143.5	-5.50	1.19	113.5	-5.50	0.63	68.5	-5.50	0.07	23.5	-5.50	-0.39	-21.5	-5.50	-0.95	-76.5
FEB 7 NOV 5		-5.28	2.41	149.6	-5.28	1.71	108.5	-5.28	0.96	76.4	-5.28	0.17	52.5	-5.28	-0.29	3.5	-5.28	-0.85	-42.5	-5.28	-1.41	-97.5	-5.28	-1.97	-152.5
JAN 23 NOV 19		-4.99	1.81	93.7	-4.95	0.98	57.6	-4.91	0.05	31.3	-4.83	-0.95	14.1	-4.75	-1.87	-32.1	-4.67	-2.81	-69.1	-4.61	-3.75	-105.1	-4.55	-4.69	-171.1
JAN 10 DEC 3		-4.50	1.32	59.2	-4.31	0.34	28.0	-4.00	-0.85	8.2	-3.63	-1.81	0.0	-3.27	-2.75	-6.0	-2.91	-3.69	-6.6	-2.55	-4.59	-3.19	-2.83	-5.8	
DEC 22		-4.17	0.99	41.5	-3.84	-0.13	14.3	-3.04	-1.81	0.5	-2.24	-2.75	0.0	-1.49	-2.99	-5.5	-1.73	-3.47	-4.2	-1.97	-3.71	-2.45	-3.19	-3.9	

NOTE - FOR ASPECTS WITH WEST COMPONENTS, THE TIME AND SIGN OF SR AND SS ARE REVERSED.

LATITUDE 34 N
ASPECT SSE - SSW

			10 PCT			20 PCT			SLOPE			30 PCT			40 PCT			50 PCT		
			THETA	ALPHA	LY	THETA	ALPHA	LY	THETA	ALPHA	LY	THETA	ALPHA	LY	THETA	ALPHA	LY	THETA	ALPHA	LY
			SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY
JUN 22			-7.08	6.75	1001.1	-7.04	6.41	981.2	-7.00	6.11	955.8	-6.96	5.84	926.0	-6.93	5.60	893.2	-6.93	5.60	893.2
JUN 1 JUL 12			-7.02	6.68	992.0	-6.98	6.36	976.1	-6.96	6.07	954.5	-6.93	5.81	928.1	-6.91	5.58	898.4	-6.91	5.58	898.4
MAY 18 JUL 27			-6.90	6.57	975.1	-6.90	6.27	966.2	-6.89	5.00	950.9	-6.88	5.76	930.4	-6.88	5.55	906.0	-6.88	5.55	906.0
MAY 3 AUG 10			-6.72	6.42	948.6	-6.72	6.15	949.2	-6.72	5.91	942.9	-6.72	5.70	930.6	-6.72	5.50	913.6	-6.72	5.50	913.6
APR 19 AUG 25			-6.50	6.24	911.0	-6.50	6.01	922.8	-6.50	5.80	927.3	-6.50	5.62	925.0	-6.50	5.45	917.0	-6.50	5.45	917.0
APR 4 SEP 9			-6.25	6.04	862.7	-6.25	5.85	886.7	-6.25	5.68	902.6	-6.25	5.53	911.1	-6.25	5.39	913.1	-6.25	5.39	913.1
MAR 21 SEP 23			-6.00	5.83	804.1	-6.00	5.69	839.9	-6.00	5.56	867.3	-6.00	5.44	886.7	-6.00	5.33	898.8	-6.00	5.33	898.8
MAR 7 OCT 8			-5.75	5.63	739.2	-5.75	5.52	785.8	-5.75	5.43	823.7	-5.75	5.35	853.2	-5.75	5.27	874.8	-5.75	5.27	874.8
FEB 20 OCT 22			-5.50	5.43	672.9	-5.50	5.37	728.4	-5.50	5.31	775.2	-5.50	5.26	813.4	-5.50	5.22	843.3	-5.50	5.22	843.3
FEB 7 NOV 5			-5.28	5.25	610.2	-5.28	5.22	672.4	-5.28	5.20	726.2	-5.28	5.18	771.3	-5.28	5.16	807.9	-5.28	5.16	807.9
JAN 23 NOV 19			-5.09	5.09	557.6	-5.09	5.09	624.5	-5.09	5.09	683.2	-5.09	5.09	733.2	-5.09	5.09	774.7	-5.09	5.09	774.7
JAN 10 DEC 3			-4.95	4.95	519.6	-4.95	4.95	589.2	-4.95	4.95	650.9	-4.95	4.95	704.0	-4.95	4.95	748.6	-4.95	4.95	748.6
DEC 22			-4.86	4.86	497.0	-4.86	4.86	568.0	-4.86	4.86	631.2	-4.86	4.86	685.8	-4.86	4.86	732.1	-4.86	4.86	732.1
			YEAR	R.I.		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.	
			285.097	554.4		296.053	563.3		304.259	578.9		309.833	589.5		313.052	595.6		313.052	595.6	
			THETA	ALPHA	LY	THETA	ALPHA	LY	THETA	ALPHA	LY	THETA	ALPHA	LY	THETA	ALPHA	LY	THETA	ALPHA	LY
			4.9	11.4		1.1	12.7		-2.4	13.8		-5.5	14.9		-8.4	15.9		-8.4	15.9	
JUN 22			-6.90	5.38	858.9	-6.88	5.19	824.2	-6.85	5.01	790.0	-6.83	4.85	757.0	-6.81	4.70	725.5	-6.81	4.70	725.5
JUN 1 JUL 12			-6.89	5.37	866.8	-6.87	5.18	834.4	-6.86	5.01	802.2	-6.84	4.86	770.9	-6.83	4.71	740.9	-6.83	4.71	740.9
MAY 18 JUL 27			-6.87	5.35	879.0	-6.87	5.18	850.6	-6.87	5.02	822.0	-6.86	4.88	793.7	-6.86	4.74	766.3	-6.86	4.74	766.3
MAY 3 AUG 10			-6.72	5.33	893.3	-6.72	5.17	870.8	-6.72	5.03	847.2	-6.72	4.90	823.4	-6.72	4.78	799.7	-6.72	4.78	799.7
APR 19 AUG 25			-6.50	5.30	904.8	-6.50	5.17	889.5	-6.50	5.05	872.2	-6.50	4.93	853.9	-6.50	4.83	835.1	-6.50	4.83	835.1
APR 4 SEP 9			-6.25	5.27	909.9	-6.25	5.16	902.5	-6.25	5.06	892.4	-6.25	4.97	880.3	-6.25	4.89	866.9	-6.25	4.89	866.9
MAR 21 SEP 23			-6.00	5.24	904.7	-6.00	5.15	905.8	-6.00	5.08	903.0	-6.00	5.01	897.5	-6.00	4.94	889.9	-6.00	4.94	889.9
MAR 7 OCT 8			-5.75	5.21	889.5	-5.75	5.15	898.6	-5.75	5.09	903.0	-5.75	5.04	903.9	-5.75	5.00	902.2	-5.75	5.00	902.2
FEB 20 OCT 22			-5.50	5.18	865.8	-5.50	5.14	882.0	-5.50	5.11	892.9	-5.50	5.08	899.7	-5.50	5.05	903.3	-5.50	5.05	903.3
FEB 7 NOV 5			-5.28	5.15	836.8	-5.28	5.13	858.9	-5.28	5.12	875.3	-5.28	5.11	887.1	-5.28	5.10	898.2	-5.28	5.10	898.2
JAN 23 NOV 19			-5.09	5.09	808.3	-5.09	5.09	834.9	-5.09	5.09	855.5	-5.09	5.09	871.1	-5.09	5.09	882.8	-5.09	5.09	882.8
JAN 10 DEC 3			-4.95	4.95	785.2	-4.95	4.95	814.6	-4.95	4.95	837.9	-4.95	4.95	856.0	-4.95	4.95	870.0	-4.95	4.95	870.0
DEC 22			-4.86	4.86	770.2	-4.86	4.86	801.2	-4.86	4.86	826.0	-4.86	4.86	845.5	-4.86	4.86	860.7	-4.86	4.86	860.7
			YEAR	R.I.		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.	
			314.286	5980		313.941	5973		312.402	5944		310.012	5898		307.020	5841		307.020	5841	

NOTE - FOR ASPECTS WITH WEST COMPONENTS, THE TIME AND SIGN OF SR AND SS ARE REVERSED.

LATITUDE 34 N
ASPECT NE - NW

	SLOPE										SLOPE										SLOPE									
	10 PCT					20 PCT					30 PCT					40 PCT					50 PCT					60 PCT				
	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY
JUN 22	-7.14	6.98	1018.0	-7.14	6.80	1011.8	-7.14	6.59	997.5	-7.14	6.36	976.7	-7.14	6.10	951.2	-7.14	5.82	922.9	-7.14	5.52	893.4	-7.14	5.20	864.0	-7.14	4.88	835.6	-7.14	4.56	808.7
JUN 1 JUL 12	-7.05	6.88	1001.3	-7.05	6.68	992.3	-7.05	6.46	975.5	-7.05	6.22	952.7	-7.05	5.94	925.7	-7.05	5.64	896.3	-7.05	5.33	866.1	-7.05	5.01	836.3	-7.05	4.68	807.9	-7.05	4.36	781.0
MAY 18 JUL 27	-6.91	6.72	971.8	-6.91	6.50	958.0	-6.91	6.24	937.3	-6.91	5.96	911.2	-6.91	5.68	881.8	-6.91	5.38	852.4	-6.91	5.07	823.0	-6.91	4.75	793.6	-6.91	4.43	764.2	-6.91	4.11	734.8
MAY 3 AUG 10	-6.72	6.50	928.0	-6.72	6.24	907.9	-6.72	5.96	881.8	-6.72	5.68	851.7	-6.72	5.38	823.0	-6.72	5.07	793.6	-6.72	4.75	764.2	-6.72	4.43	734.8	-6.72	4.11	705.4	-6.72	3.79	676.0
APR 19 AUG 25	-6.50	6.23	870.2	-6.50	5.94	842.8	-6.50	5.63	810.9	-6.50	5.29	776.3	-6.50	4.93	740.8	-6.50	4.57	706.3	-6.50	4.21	671.8	-6.50	3.85	637.3	-6.50	3.49	602.8	-6.50	3.13	568.3
APR 4 SEP 9	-6.25	5.95	800.8	-6.25	5.62	766.1	-6.25	5.27	728.4	-6.25	4.89	689.7	-6.25	4.51	651.5	-6.25	4.13	613.3	-6.25	3.75	575.1	-6.25	3.37	536.9	-6.25	2.99	498.7	-6.25	2.61	460.5
MAR 21 SEP 23	-6.00	5.66	721.9	-6.00	5.29	680.3	-6.00	4.89	637.7	-6.00	4.48	595.6	-6.00	4.06	553.4	-6.00	3.64	511.2	-6.00	3.22	469.0	-6.00	2.80	426.8	-6.00	2.38	384.6	-6.00	1.96	342.4
MAR 7 OCT 8	-5.75	5.36	639.0	-5.75	4.95	591.9	-5.75	4.52	545.4	-5.75	4.06	501.2	-5.75	3.61	460.6	-5.75	3.16	415.8	-5.75	2.71	371.0	-5.75	2.26	326.2	-5.75	1.81	281.4	-5.75	1.36	236.6
FEB 20 OCT 22	-5.50	5.08	558.4	-5.50	4.63	507.2	-5.50	4.16	455.2	-5.50	3.67	413.1	-5.50	3.17	372.8	-5.50	2.67	330.7	-5.50	2.17	288.6	-5.50	1.67	246.5	-5.50	1.17	204.4	-5.50	0.67	162.3
FEB 7 NOV 5	-5.28	4.82	485.2	-5.28	4.33	431.5	-5.28	3.81	381.4	-5.28	3.26	336.4	-5.28	2.71	291.4	-5.28	2.16	246.5	-5.28	1.61	201.6	-5.28	1.06	156.7	-5.28	0.51	111.8	-5.28	-0.04	66.9
JAN 23 NOV 19	-5.09	4.60	426.0	-5.09	4.08	370.9	-5.09	3.53	320.7	-5.09	2.98	276.5	-5.09	2.43	231.6	-5.09	1.88	186.7	-5.09	1.33	141.8	-5.09	0.78	96.9	-5.09	0.23	52.0	-5.09	-0.32	7.1
JAN 10 DEC 3	-4.95	4.44	384.2	-4.95	3.89	328.7	-4.95	3.32	278.8	-4.95	2.74	235.5	-4.95	2.19	190.6	-4.95	1.64	145.7	-4.95	1.09	100.8	-4.95	0.54	55.9	-4.95	-0.01	11.0	-4.95	-0.56	-33.9
DEC 22	-4.86	4.34	359.9	-4.86	3.78	304.3	-4.86	3.19	254.7	-4.86	2.59	212.2	-4.86	2.00	167.1	-4.86	1.40	122.2	-4.86	0.81	77.3	-4.86	0.21	32.4	-4.86	-0.38	-12.5	-4.86	-0.93	-67.6
JUN 22	-7.14	5.82	922.9	-7.14	5.52	893.4	-7.14	5.20	864.0	-7.14	4.88	835.6	-7.14	4.56	808.7	-7.14	4.24	781.0	-7.14	3.92	753.3	-7.14	3.60	725.6	-7.14	3.28	697.9	-7.14	2.96	670.2
JUN 1 JUL 12	-7.05	5.64	896.3	-7.05	5.33	866.1	-7.05	5.01	836.3	-7.05	4.68	807.9	-7.05	4.36	781.0	-7.05	4.03	754.1	-7.05	3.71	727.2	-7.05	3.39	699.3	-7.05	3.07	672.4	-7.05	2.75	645.5
MAY 18 JUL 27	-6.91	5.46	850.7	-6.91	5.03	819.5	-6.91	4.69	789.3	-6.91	4.36	760.7	-6.91	4.03	734.1	-6.91	3.70	705.4	-6.91	3.37	676.0	-6.91	3.04	646.6	-6.91	2.71	617.2	-6.91	2.38	587.8
MAY 3 AUG 10	-6.72	5.26	786.2	-6.72	4.83	753.9	-6.72	4.49	723.2	-6.72	4.16	694.8	-6.72	3.83	665.4	-6.72	3.50	636.0	-6.72	3.17	606.6	-6.72	2.84	577.2	-6.72	2.51	547.8	-6.72	2.18	518.4
APR 19 AUG 25	-6.50	4.95	705.9	-6.50	4.51	672.7	-6.50	4.18	642.0	-6.50	3.85	612.6	-6.50	3.52	583.2	-6.50	3.19	553.8	-6.50	2.86	524.4	-6.50	2.53	495.0	-6.50	2.20	465.6	-6.50	1.87	436.2
APR 4 SEP 9	-6.25	4.60	615.3	-6.25	4.16	581.8	-6.25	3.70	548.3	-6.25	3.24	515.8	-6.25	2.78	483.3	-6.25	2.32	448.8	-6.25	1.86	413.3	-6.25	1.40	377.8	-6.25	0.94	342.3	-6.25	-0.52	306.8
MAR 21 SEP 23	-6.00	4.32	519.0	-6.00	3.82	486.0	-6.00	3.32	456.9	-6.00	2.82	423.6	-6.00	2.32	391.1	-6.00	1.82	358.6	-6.00	1.32	326.1	-6.00	0.82	293.6	-6.00	0.32	261.1	-6.00	-0.18	228.6
MAR 7 OCT 8	-5.75	4.04	424.3	-5.75	3.52	392.5	-5.75	3.00	360.6	-5.75	2.48	328.8	-5.75	1.96	296.9	-5.75	1.44	265.0	-5.75	0.92	233.1	-5.75	0.40	201.2	-5.75	-0.12	169.3	-5.75	-0.64	137.4
FEB 20 OCT 22	-5.50	3.76	337.8	-5.50	3.24	306.0	-5.50	2.72	274.1	-5.50	2.20	242.2	-5.50	1.68	210.3	-5.50	1.16	178.4	-5.50	0.64	146.5	-5.50	0.12	114.6	-5.50	-0.40	82.7	-5.50	-0.92	50.8
FEB 7 NOV 5	-5.28	3.50	264.1	-5.28	2.98	232.3	-5.28	2.46	200.4	-5.28	1.94	168.5	-5.28	1.42	136.6	-5.28	0.90	104.7	-5.28	0.38	72.8	-5.28	-0.14	40.9	-5.28	-0.66	9.0	-5.28	-1.18	-22.9
JAN 23 NOV 19	-5.09	3.28	207.8	-5.09	2.76	176.0	-5.09	2.24	144.1	-5.09	1.72	112.2	-5.09	1.20	80.3	-5.09	0.68	48.4	-5.09	0.16	16.5	-5.09	-0.36	-15.4	-5.09	-0.88	-47.5	-5.09	-1.40	-99.6
JAN 10 DEC 3	-4.95	3.00	170.1	-4.95	2.48	138.3	-4.95	1.96	106.4	-4.95	1.44	74.5	-4.95	0.92	42.6	-4.95	0.40	10.7	-4.95	-0.12	-21.2	-4.95	-0.64	-73.3	-4.95	-1.16	-125.4	-4.95	-1.68	-177.5
DEC 22	-4.86	2.82	149.0	-4.86	2.30	117.2	-4.86	1.78	85.3	-4.86	1.26	53.4	-4.86	0.74	21.5	-4.86	0.22	-10.4	-4.86	-0.30	-62.5	-4.86	-0.82	-114.6	-4.86	-1.34	-166.8	-4.86	-1.86	-218.9

NOTE - FOR ASPECTS WITH WEST COMPONENTS, THE TIME AND SIGN OF SR AND SS ARE REVERSED.

LATITUDE 34 N
ASPECT SE - SW

	10 PCT			20 PCT			30 PCT			40 PCT			50 PCT		
	THETA	ALPHA	LY	THETA	ALPHA	LY	THETA	ALPHA	LY	THETA	ALPHA	LY	THETA	ALPHA	LY
JUN 22	-7.14	6.65	1004.5	-7.14	6.21	989.6	-7.14	5.82	970.6	-7.14	5.46	948.2	-7.14	5.14	923.4
JUN 1	-7.05	6.58	994.4	-7.05	6.15	982.7	-7.05	5.77	966.6	-7.05	5.42	946.9	-7.05	5.11	924.5
MAY 18	-6.91	6.46	975.8	-6.91	6.06	969.4	-6.91	5.69	958.3	-6.91	5.36	946.9	-6.91	5.06	924.8
MAY 3	-6.72	6.30	947.0	-6.72	5.92	947.9	-6.72	5.58	943.6	-6.72	5.27	934.7	-6.72	4.99	922.0
MAY 19	-6.50	6.11	906.6	-6.50	5.76	916.1	-6.50	5.45	920.0	-6.50	5.17	918.6	-6.50	4.91	912.7
APR 4	-6.25	5.91	855.5	-6.25	5.59	874.2	-6.25	5.31	886.7	-6.25	5.05	893.4	-6.25	4.83	894.9
MAR 21	-6.00	5.69	794.0	-6.00	5.41	821.6	-6.00	5.16	842.8	-6.00	4.93	857.5	-6.00	4.73	866.5
MAR 7	-5.75	5.47	726.5	-5.75	5.23	762.2	-5.75	5.01	791.1	-5.75	4.82	813.3	-5.75	4.64	829.2
OCT 22	-5.50	5.27	658.1	-5.50	5.05	700.4	-5.50	4.87	735.8	-5.50	4.70	764.3	-5.50	4.55	786.1
FEB 7	-5.28	5.07	593.8	-5.28	4.90	641.0	-5.28	4.74	681.5	-5.28	4.60	714.8	-5.28	4.47	741.4
JAN 23	-5.09	4.91	540.2	-5.09	4.76	590.7	-5.09	4.63	634.6	-5.09	4.51	671.4	-5.09	4.40	701.4
JAN 10	-4.95	4.80	501.5	-4.95	4.66	554.1	-4.95	4.55	600.0	-4.95	4.45	639.0	-4.95	4.36	671.1
DEC 2	-4.86	4.73	478.6	-4.86	4.61	532.2	-4.86	4.55	579.2	-4.86	4.41	619.3	-4.86	4.33	652.5
	YEAR	R.i.	5364	YEAR	R.i.	5524	YEAR	R.i.	5642	YEAR	R.i.	5721	YEAR	R.i.	5764
	281.931			290.330			296.568			300.709			302.956		
	60 PCT	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA
		10.2	21.7		24.1		26.3		28.2		30.0		30.0		30.0
	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY
JUN 22	-7.14	4.85	897.1	-7.14	4.60	870.4	-7.14	4.36	843.9	-7.14	4.16	818.2	-7.14	3.97	793.5
JUN 1	-7.05	4.83	900.3	-7.05	4.58	875.4	-7.05	4.36	850.5	-7.05	4.15	826.2	-7.05	3.97	802.7
MAY 18	-6.91	4.80	904.5	-6.91	4.56	882.5	-6.91	4.34	860.4	-6.91	4.15	838.4	-6.91	3.97	816.9
MAY 3	-6.72	4.75	906.5	-6.72	4.52	889.2	-6.72	4.32	870.8	-6.72	4.14	852.2	-6.72	3.98	833.6
APR 19	-6.50	4.69	903.3	-6.50	4.48	891.4	-6.50	4.30	877.7	-6.50	4.13	863.2	-6.50	3.99	848.1
APR 4	-6.25	4.62	892.2	-6.25	4.44	886.1	-6.25	4.27	877.7	-6.25	4.13	867.7	-6.25	3.99	856.7
MAR 21	-6.00	4.55	870.5	-6.00	4.39	870.5	-6.00	4.25	867.5	-6.00	4.12	862.3	-6.00	4.00	855.5
MAR 7	-5.75	4.49	839.6	-5.75	4.35	845.4	-5.75	4.22	847.6	-5.75	4.11	847.0	-5.75	4.01	844.3
FEB 20	-5.50	4.42	802.0	-5.50	4.30	812.9	-5.50	4.20	819.7	-5.50	4.10	823.3	-5.50	4.01	824.4
FEB 7	-5.28	4.36	761.8	-5.28	4.26	776.8	-5.28	4.17	787.4	-5.28	4.09	794.5	-5.28	4.02	798.7
JAN 23	-5.09	4.31	725.0	-5.09	4.23	743.2	-5.09	4.15	756.7	-5.09	4.09	766.3	-5.09	4.03	773.0
JAN 10	-4.95	4.27	696.8	-4.95	4.20	717.0	-4.95	4.14	732.3	-4.95	4.08	743.8	-4.95	4.03	752.1
DEC 3	-4.86	4.25	679.4	-4.86	4.19	700.6	-4.86	4.13	717.0	-4.86	4.08	729.4	-4.86	4.03	738.6
DEC 2															

NOTE - FOR ASPECTS WITH WEST COMPONENTS, THE TIME AND SIGN OF SR AND SS ARE REVERSED.

		SLOPE												50 PCT				
		10 PCT				20 PCT				30 PCT				40 PCT				
		THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA
		36.0	6.5				37.6	13.2		38.8	19.9	39.6	26.4	39.9	32.6			
JUN 22		-7.14	6.79	1015.3			-7.14	6.42	1008.7	-7.14	6.04	996.2	-7.14	5.64	979.3	-7.14	5.25	959.5
JUN 1 JUL 12		-7.05	6.70	1000.2			-7.05	6.33	992.3	-7.05	5.93	978.8	-7.05	5.54	961.3	-7.05	5.14	941.1
MAY 18 JUL 27		-6.91	6.55	973.3			-6.91	6.16	963.2	-6.91	5.76	948.2	-6.91	5.36	929.6	-6.91	4.96	908.8
MAY 3 AUG 10		-6.72	6.34	933.1			-6.72	5.95	920.0	-6.72	5.54	902.9	-6.72	5.13	883.0	-6.72	4.73	861.6
APR 19 AUG 25		-6.50	6.10	879.4			-6.50	5.69	863.0	-6.50	5.27	843.6	-6.50	4.85	822.3	-6.50	4.45	800.4
APR 4 SEP 9		-6.25	5.84	814.3			-6.25	5.41	794.6	-6.25	4.98	773.0	-6.25	4.55	750.6	-6.25	4.14	728.2
MAR 21 SEP 23		-6.00	5.56	739.4			-6.00	5.12	716.7	-6.00	4.67	693.2	-6.00	4.24	670.0	-6.00	3.83	647.7
MAR 7 OCT 8		-5.75	5.29	660.1			-5.75	4.83	634.9	-5.75	4.37	610.2	-5.75	3.93	586.6	-5.75	3.51	564.7
FEB 20 OCT 22		-5.50	5.03	582.3			-5.50	4.55	555.3	-5.50	4.08	529.8	-5.50	3.63	506.4	-5.50	3.21	485.2
FEB 7 NOV 5		-5.28	4.78	511.1			-5.28	4.29	483.1	-5.28	3.81	457.4	-5.28	3.35	434.5	-5.28	2.93	414.2
JAN 23 NOV 19		-5.09	4.58	453.0			-5.09	4.07	424.5	-5.09	3.58	399.0	-5.09	3.11	376.7	-5.09	2.69	357.5
JAN 10 DEC 3		-4.85	4.43	411.9			-4.85	3.91	383.3	-4.85	3.41	358.1	-4.85	2.94	336.4	-4.85	2.51	317.9
DEC 22		-4.66	4.34	387.9			-4.66	3.81	359.3	-4.66	3.31	334.3	-4.66	2.83	313.0	-4.66	2.40	295.1
		YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	R.I.
		264.932	5041	257.620	4901	249.946	4755	242.216	4608	234.685	4465							
		SLOPE												100 PCT				
		THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA
		40.0	38.4				39.8	43.6				38.9	52.6	38.3	56.3			
JUN 22		-7.14	4.87	938.2			-7.14	4.51	916.4	-7.14	4.17	895.0	-7.14	3.86	874.4	-7.14	3.58	854.9
JUN 1 JUL 12		-7.05	4.76	919.6			-7.05	4.40	897.8	-7.05	4.07	876.5	-7.05	3.76	856.2	-7.05	3.48	836.9
MAY 18 JUL 27		-6.91	4.58	887.2			-6.91	4.23	865.5	-6.91	3.89	844.4	-6.91	3.59	824.5	-6.91	3.32	805.6
MAY 3 AUG 10		-6.72	4.35	839.8			-6.72	3.99	818.3	-6.72	3.66	797.8	-6.72	3.36	778.4	-6.72	3.09	760.3
APR 19 AUG 25		-6.50	4.06	778.6			-6.50	3.71	757.5	-6.50	3.39	737.7	-6.50	3.09	719.2	-6.50	2.83	702.0
APR 4 SEP 9		-6.25	3.76	706.7			-6.25	3.41	686.4	-6.25	3.09	667.5	-6.25	2.80	650.2	-6.25	2.54	634.2
MAR 21 SEP 23		-6.00	3.44	626.8			-6.00	3.09	607.4	-6.00	2.78	589.8	-6.00	2.50	573.8	-6.00	2.24	559.3
MAR 7 OCT 8		-5.75	3.13	544.7			-5.75	2.78	526.6	-5.75	2.47	510.4	-5.75	2.19	496.0	-5.75	1.95	483.0
FEB 20 OCT 22		-5.50	2.82	466.4			-5.50	2.48	449.7	-5.50	2.17	435.0	-5.50	1.90	422.1	-5.50	1.66	410.6
FEB 7 NOV 5		-5.28	2.54	396.7			-5.28	2.20	381.4	-5.28	1.89	368.2	-5.28	1.63	356.8	-5.28	1.40	346.7
JAN 23 NOV 19		-5.09	2.30	341.1			-5.09	1.96	327.1	-5.09	1.66	315.1	-5.09	1.40	304.9	-5.09	1.17	296.0
JAN 10 DEC 3		-4.85	2.12	302.4			-4.85	1.78	289.4	-4.85	1.49	278.4	-4.85	1.23	269.0	-4.85	1.01	261.0
DEC 22		-4.66	2.02	280.2			-4.66	1.68	267.7	-4.66	1.38	257.2	-4.66	1.13	248.4	-4.66	.90	240.8
		YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	R.I.
		227.531	4329	220.842	4202	214.677	4084	209.043	3977	203.875	3879							

NOTE - FOR ASPECTS WITH WEST COMPONENTS, THE TIME AND SIGN OF SR AND SS ARE REVERSED.

LATITUDE 34 N
ASPECT ESE - MSW

		10 PCT				20 PCT				30 PCT				40 PCT				50 PCT			
		THETA	ALPHA	LY	SR	THETA	ALPHA	LY	SR	THETA	ALPHA	LY	SR	THETA	ALPHA	LY	SR	THETA	ALPHA	LY	SR
		31.7	6.2			29.1	12.0			26.4	17.2			23.7	22.0			21.0	26.3		
		SR	SS	LY	SR	SS	LY	SR	SS	SR	SS	LY	SR	SS	LY	SR	SS	SR	SS	LY	SR
JUN 22		-7.14	6.62	1008.4	-7.14	6.13	998.1	-7.14	5.68	984.4	-7.14	5.27	967.8	-7.14	4.89	949.2	-7.14	4.89	949.2		
JUN 1 JUL 12		-7.05	6.55	996.8	-7.05	6.07	988.4	-7.05	5.62	978.4	-7.05	5.21	961.5	-7.05	4.84	944.4	-7.05	4.84	944.4		
MAY 18 JUL 27		-6.91	6.42	975.8	-6.91	5.95	970.5	-6.91	5.52	961.5	-6.91	5.12	949.4	-6.91	4.76	938.5	-6.91	4.76	938.5		
MAY 3 AUG 10		-6.72	6.25	943.6	-6.72	5.80	942.5	-6.72	5.38	937.6	-6.72	5.00	929.5	-6.72	4.66	918.5	-6.72	4.66	918.5		
APR 19 AUG 25		-6.50	6.04	899.2	-6.50	5.61	903.1	-6.50	5.22	903.2	-6.50	4.86	899.6	-6.50	4.53	893.0	-6.50	4.53	893.0		
APR 4 SEP 9		-6.25	5.82	843.9	-6.25	5.41	853.1	-6.25	5.04	858.4	-6.25	4.70	859.8	-6.25	4.39	857.8	-6.25	4.39	857.8		
MAR 21 SEP 23		-6.00	5.59	778.4	-6.00	5.20	792.8	-6.00	4.85	803.1	-6.00	4.53	809.4	-6.00	4.25	812.0	-6.00	4.25	812.0		
MAR 7 OCT 8		-5.75	5.35	707.3	-5.75	4.99	726.3	-5.75	4.66	741.3	-5.75	4.37	752.1	-5.75	4.10	758.9	-5.75	4.10	758.9		
FEB 20 OCT 22		-5.50	5.13	636.0	-5.50	4.79	658.8	-5.50	4.48	677.5	-5.50	4.21	692.1	-5.50	3.97	702.6	-5.50	3.97	702.6		
FEB 7 NOV 5		-5.28	4.93	565.5	-5.28	4.61	595.1	-5.28	4.32	616.8	-5.28	4.07	636.2	-5.28	3.84	647.6	-5.28	3.84	647.6		
JAN 23 NOV 19		-5.09	4.75	514.4	-5.09	4.45	541.9	-5.09	4.18	565.6	-5.09	3.94	585.1	-5.09	3.73	600.4	-5.09	3.73	600.4		
JAN 10 DEC 3		-4.95	4.63	475.0	-4.95	4.34	503.6	-4.95	4.08	528.4	-4.95	3.85	549.1	-4.95	3.66	565.7	-4.95	3.66	565.7		
DEC 22		-4.86	4.55	451.7	-4.86	4.27	480.9	-4.86	4.02	506.3	-4.86	3.80	527.6	-4.86	3.61	544.9	-4.86	3.61	544.9		
		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.	YEAR	R.I.		YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	
		277.064	5271		281.311	5352		284.161	5406	285.649	5435		285.908	5440							
		SLOPE				SLOPE				SLOPE				SLOPE				SLOPE			
		THETA	ALPHA	LY	SR	THETA	ALPHA	LY	SR	THETA	ALPHA	LY	SR	THETA	ALPHA	LY	SR	THETA	ALPHA	LY	SR
		18.4	30.1			16.0	33.5			13.8	36.5			11.7	39.1			9.9	41.5		
		SR	SS	LY	SR	SS	LY	SR	SS	SR	SS	LY	SR	SS	LY	SR	SS	SR	SS	LY	SR
JUN 22		-7.14	4.55	929.3	-7.14	4.25	908.9	-7.14	3.98	888.4	-7.14	3.74	868.5	-7.14	3.52	849.1	-7.14	3.52	849.1		
JUN 1 JUL 12		-7.05	4.51	925.9	-7.05	4.21	906.7	-7.05	3.95	887.3	-7.05	3.71	868.3	-7.05	3.50	849.8	-7.05	3.50	849.8		
MAY 18 JUL 27		-6.91	4.44	918.8	-6.91	4.15	901.6	-6.91	3.90	884.0	-6.91	3.67	866.6	-6.91	3.46	849.5	-6.91	3.46	849.5		
MAY 3 AUG 10		-6.72	4.35	905.6	-6.72	4.08	891.3	-6.72	3.83	876.3	-6.72	3.61	861.1	-6.72	3.42	846.0	-6.72	3.42	846.0		
APR 19 AUG 25		-6.50	4.24	884.0	-6.50	3.98	873.2	-6.50	3.75	861.3	-6.50	3.54	848.8	-6.50	3.36	836.1	-6.50	3.36	836.1		
APR 4 SEP 9		-6.25	4.12	853.0	-6.25	3.88	846.0	-6.25	3.66	837.5	-6.25	3.47	828.1	-6.25	3.30	818.1	-6.25	3.30	818.1		
MAR 21 SEP 23		-6.00	4.00	811.5	-6.00	3.77	808.4	-6.00	3.57	803.5	-6.00	3.39	797.2	-6.00	3.23	790.0	-6.00	3.23	790.0		
MAR 7 OCT 8		-5.75	3.87	762.4	-5.75	3.66	763.0	-5.75	3.48	761.4	-5.75	3.31	758.1	-5.75	3.17	753.6	-5.75	3.17	753.6		
FEB 20 OCT 22		-5.50	3.75	705.5	-5.50	3.56	713.3	-5.50	3.39	714.6	-5.50	3.24	714.0	-5.50	3.10	712.0	-5.50	3.10	712.0		
FEB 7 NOV 5		-5.28	3.54	657.2	-5.28	3.46	665.6	-5.28	3.31	667.3	-5.28	3.17	668.9	-5.28	3.05	668.9	-5.28	3.05	668.9		
JAN 23 NOV 19		-5.09	3.55	612.0	-5.09	3.48	620.2	-5.09	3.24	625.7	-5.09	3.11	629.0	-5.09	3.00	630.6	-5.09	3.00	630.6		
JAN 10 DEC 3		-4.95	3.48	578.5	-4.95	3.43	588.0	-4.95	3.19	594.7	-4.95	3.07	599.0	-4.95	2.96	601.6	-4.95	2.96	601.6		
DEC 22		-4.86	3.44	558.3	-4.86	3.29	568.5	-4.86	3.16	575.7	-4.86	3.05	580.7	-4.86	2.94	583.9	-4.86	2.94	583.9		
		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.	YEAR	R.I.		YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	
		285.134	5425		283.547	5395		281.365	5353	278.782	5304		275.930	5250							

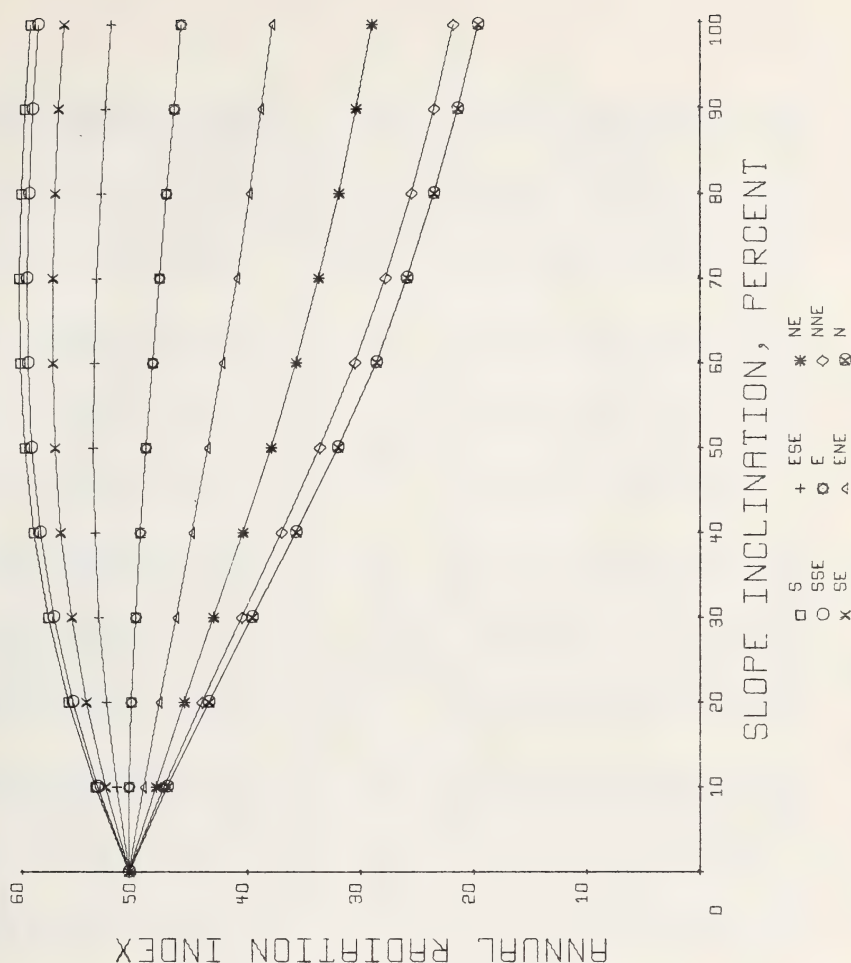
NOTE - FOR ASPECTS WITH WEST COMPONENTS, THE TIME AND SIGN OF SR AND SS ARE REVERSED.

LATITUDE 34 N
ASPECT E - W

		10 PCT				20 PCT				SLOPE				30 PCT				40 PCT				50 PCT						
		THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY		
		33.8	6.9				33.3	13.6				32.4	19.9				31.3	25.8				30.0	31.1					
		YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	
		271.117	.5158	269.919	.5135	268.006	.5099	265.482	.5051	262.478	.4994																	
		THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	
		28.7	35.9	27.3	40.2	25.9	44.0	24.6	47.3	23.3	50.3	22.7	49.1	21.9	48.9	21.7	48.7	21.5	48.5	21.3	48.3	21.1	47.9	20.9	47.7	20.7		
		SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY
		-7.14	4.52	943.8	-7.14	4.18	925.4	-7.14	3.88	907.1	-7.14	3.61	889.2	-7.14	3.36	872.0	-7.14	3.11	854.8	-7.14	2.86	837.6	-7.14	2.61	820.4	-7.14	2.36	
		-7.05	4.46	933.0	-7.05	4.12	915.2	-7.05	3.82	897.4	-7.05	3.55	880.1	-7.05	3.29	862.9	-7.05	3.04	845.7	-7.05	2.79	828.5	-7.05	2.54	811.3	-7.05	2.29	
		-6.91	4.34	913.4	-6.91	4.02	896.0	-6.91	3.72	879.9	-6.91	3.46	863.5	-6.91	3.21	847.5	-6.91	2.96	831.5	-6.91	2.71	815.5	-6.91	2.46	799.5	-6.91	2.21	
		-6.72	4.19	883.3	-6.72	3.87	868.0	-6.72	3.59	852.4	-6.72	3.33	837.5	-6.72	3.08	822.0	-6.72	2.83	806.5	-6.72	2.58	791.0	-6.72	2.33	775.5	-6.72	2.08	
		-6.50	4.01	841.8	-6.50	3.70	828.3	-6.50	3.43	814.6	-6.50	3.17	801.1	-6.50	2.91	787.9	-6.50	2.66	773.4	-6.50	2.41	758.9	-6.50	2.16	744.4	-6.50	2.00	
		-6.25	3.81	789.9	-6.25	3.52	778.4	-6.25	3.25	766.7	-6.25	2.99	755.1	-6.25	2.73	743.6	-6.25	2.48	732.1	-6.25	2.23	720.6	-6.25	1.98	709.1	-6.25	1.73	
		-6.00	3.61	728.4	-6.00	3.32	719.0	-6.00	3.07	709.4	-6.00	2.82	699.6	-6.00	2.57	690.0	-6.00	2.32	680.4	-6.00	2.07	670.8	-6.00	1.82	661.2	-6.00	1.57	
		-5.75	3.40	661.6	-5.75	3.13	654.3	-5.75	2.88	646.7	-5.75	2.63	639.0	-5.75	2.38	631.3	-5.75	2.13	623.6	-5.75	1.88	615.9	-5.75	1.63	608.2	-5.75	1.38	
		-5.50	3.20	594.5	-5.50	2.94	589.1	-5.50	2.71	583.2	-5.50	2.48	577.2	-5.50	2.25	571.2	-5.50	2.02	565.3	-5.50	1.79	559.3	-5.50	1.56	553.4	-5.50	1.33	
		-5.28	3.02	531.9	-5.28	2.77	528.1	-5.28	2.55	523.8	-5.28	2.33	519.2	-5.28	2.11	514.3	-5.28	1.89	509.4	-5.28	1.67	504.5	-5.28	1.45	499.6	-5.28	1.23	
		-5.09	2.87	480.0	-5.09	2.63	477.4	-5.09	2.41	474.3	-5.09	2.20	470.8	-5.09	1.99	467.0	-5.09	1.78	463.1	-5.09	1.57	459.2	-5.09	1.36	455.3	-5.09	1.15	
		-4.85	2.76	442.9	-4.85	2.52	441.0	-4.85	2.32	438.7	-4.85	2.12	435.9	-4.85	1.92	432.9	-4.85	1.72	429.9	-4.85	1.52	427.0	-4.85	1.32	424.0	-4.85	1.12	
		-4.66	2.69	420.9	-4.66	2.46	419.5	-4.66	2.26	417.6	-4.66	2.06	415.3	-4.66	1.86	412.6	-4.66	1.66	410.3	-4.66	1.46	408.0	-4.66	1.26	405.7	-4.66	1.06	
		YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	
		259.131	.4930	255.568	.4862	251.909	.4793	248.251	.4723	244.633	.4654																	

NOTE - FOR ASPECTS WITH WEST COMPONENTS, THE TIME AND SIGN OF SR AND SS ARE REVERSED.

RADIATION INDEXES FOR VARIOUS FACETS AT LATITUDE 36 N



HORIZONTAL SURFACE

LATITUDE 36 N

	SR	SS	LY
JUN 22	-7.23	7.23	1018.3
JUN 1 JUL 12	-7.14	7.14	1003.2
MAY 18 JUL 27	-6.98	6.98	976.3
MAY 3 AUG 10	-6.78	6.78	936.0
APR 19 AUG 25	-6.54	6.54	882.2
APR 4 SEP 9	-6.27	6.27	817.0
MAR 21 SEP 23	-6.00	6.00	742.0
MAR 7 OCT 8	-5.73	5.73	662.5
FEB 20 OCT 22	-5.46	5.46	584.4
FEB 7 NOV 5	-5.22	5.22	513.1
JAN 23 NOV 19	-5.02	5.02	454.8
JAN 10 DEC 3	-4.86	4.86	413.6
DEC 22	-4.77	4.77	389.5

YEAR R.I.
265.822 .5057

LATITUDE 36 N
ASPECT S -

		10 PCT				20 PCT				SLOPE				30 PCT				40 PCT				50 PCT						
		THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY		
		30.3	0.0				24.7	0.0				19.3	0.0				14.2	0.0				9.4	0.0					
		YEAR	R.I.	YEAR	R.I.	YEAR	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.
		281.274	*5351	293.920	*5592	303.608	*5776	310.456	*5907	314.747	*5988	316.867	*6018	317.245	*6036	316.285	*6018	314.353	*5981	311.722	*5931	308.866	*5887	306.916	*5838	304.965	*5793	
JUN 22		6.98	6.98	1005.9		6.77	6.77	986.5		6.58	6.58	960.8		6.42	6.42	930.1		6.28	6.28	896.1		6.06	6.06	860.6		6.00	6.00	847.0
JUN 1 JUL 12		6.91	6.91	995.5		6.71	6.71	980.5		6.54	6.54	958.8		6.39	6.39	931.8		6.26	6.26	901.0		6.04	6.04	866.4		5.98	5.98	852.6
MAY 18 JUL 27		6.79	6.79	976.5		6.62	6.62	968.9		6.47	6.47	954.1		6.34	6.34	933.4		6.22	6.22	908.1		6.02	6.02	871.8		5.96	5.96	859.0
MAY 3 AUG 10		6.62	6.62	947.0		6.49	6.49	949.7		6.37	6.37	944.6		6.27	6.27	932.7		6.18	6.18	915.4		6.00	6.00	880.9		5.94	5.94	872.6
APR 19 AUG 25		6.43	6.43	905.9		6.34	6.34	920.9		6.26	6.26	927.5		6.19	6.19	926.4		6.12	6.12	919.1		6.00	6.00	892.7		5.94	5.94	872.6
APR 4 SEP 9		6.22	6.22	854.1		6.17	6.17	882.3		6.13	6.13	901.6		6.10	6.10	912.6		6.06	6.06	916.5		5.94	5.94	885.6		5.88	5.88	872.6
MAR 21 SEP 23		6.00	6.00	792.0		6.00	6.00	833.3		6.00	6.00	865.6		6.00	6.00	889.1		6.00	6.00	904.7		5.88	5.88	878.0		5.80	5.80	852.6
MAR 7 OCT 8		5.73	5.73	723.9		5.73	5.73	777.1		5.73	5.73	821.2		5.73	5.73	856.3		5.73	5.73	883.0		5.62	5.62	858.0		5.54	5.54	827.0
FEB 20 OCT 22		5.46	5.46	654.9		5.46	5.46	717.6		5.46	5.46	771.4		5.46	5.46	816.1		5.46	5.46	852.1		5.34	5.34	827.0		5.26	5.26	802.0
FEB 7 NOV 5		5.22	5.22	590.0		5.22	5.22	659.7		5.22	5.22	720.8		5.22	5.22	772.8		5.22	5.22	815.9		5.12	5.12	786.8		5.02	5.02	761.8
JAN 23 NOV 19		5.02	5.02	535.9		5.02	5.02	610.2		5.02	5.02	676.1		5.02	5.02	735.1		5.02	5.02	781.0		4.92	4.92	751.9		4.82	4.82	726.9
JAN 10 DEC 3		4.86	4.86	496.9		4.86	4.86	573.8		4.86	4.86	642.5		4.86	4.86	708.4		4.86	4.86	753.4		4.76	4.76	724.3		4.66	4.66	700.3
DEC 22		4.77	4.77	473.8		4.77	4.77	551.9		4.77	4.77	622.0		4.77	4.77	683.4		4.77	4.77	735.9		4.66	4.66	706.8		4.57	4.57	681.7
JUN 22		6.15	6.15	860.1		6.03	6.03	823.5		5.92	5.92	787.3		5.83	5.83	752.3		5.74	5.74	718.8		5.54	5.54	689.3		5.46	5.46	664.2
JUN 1 JUL 12		6.14	6.14	867.9		6.03	6.03	833.7		5.93	5.93	799.6		5.84	5.84	768.5		5.76	5.76	734.5		5.56	5.56	705.4		5.48	5.48	680.3
MAY 18 JUL 27		6.12	6.12	879.9		6.02	6.02	850.0		5.94	5.94	819.7		5.86	5.86	789.7		5.79	5.79	755.4		5.59	5.59	726.3		5.50	5.50	701.2
MAY 3 AUG 10		6.09	6.09	894.2		6.02	6.02	870.6		5.95	5.95	845.6		5.89	5.89	820.3		5.83	5.83	785.1		5.63	5.63	756.0		5.54	5.54	731.9
APR 19 AUG 25		6.06	6.06	906.9		6.01	6.01	891.1		5.97	5.97	873.2		5.92	5.92	853.9		5.88	5.88	834.1		5.68	5.68	805.0		5.58	5.58	780.9
APR 4 SEP 9		6.03	6.03	914.5		6.01	6.01	907.9		5.98	5.98	898.1		5.96	5.96	886.1		5.94	5.94	872.6		5.74	5.74	843.5		5.64	5.64	819.4
MAR 21 SEP 23		6.00	6.00	913.6		6.00	6.00	917.0		6.00	6.00	916.1		6.00	6.00	912.1		6.00	6.00	905.8		5.80	5.80	876.7		5.70	5.70	852.6
MAR 7 OCT 8		5.73	5.73	902.2		5.73	5.73	915.2		5.73	5.73	923.1		5.73	5.73	926.9		5.73	5.73	927.7		5.54	5.54	898.0		5.44	5.44	874.6
FEB 20 OCT 22		5.46	5.46	880.1		5.46	5.46	901.2		5.46	5.46	916.5		5.46	5.46	927.1		5.46	5.46	934.0		5.26	5.26	905.1		5.16	5.16	881.0
FEB 7 NOV 5		5.22	5.22	850.7		5.22	5.22	878.1		5.22	5.22	899.3		5.22	5.22	915.3		5.22	5.22	927.2		5.02	5.02	898.3		4.92	4.92	874.0
JAN 23 NOV 19		5.02	5.02	820.6		5.02	5.02	852.5		5.02	5.02	877.9		5.02	5.02	897.8		5.02	5.02	913.3		4.82	4.82	884.4		4.72	4.72	860.1
JAN 10 DEC 3		4.86	4.86	795.8		4.86	4.86	830.5		4.86	4.86	858.6		4.86	4.86	880.9		4.86	4.86	898.7		4.66	4.66	870.6		4.56	4.56	846.5
DEC 22		4.77	4.77	779.8		4.77	4.77	815.0		4.77	4.77	845.4		4.77	4.77	869.1		4.77	4.77	886.1		4.57	4.57	857.0		4.47	4.47	832.9

NOTE - FOR ASPECTS WITH WEST COMPONENTS* THE TIME AND SIGN OF SR AND SS ARE REVERSED.

LATITUDE 36 N
ASPECT NNE - NNW

	10 PCT			20 PCT			SLOPE			30 PCT			40 PCT			50 PCT		
	THETA	ALPHA	R.I.	THETA	ALPHA	R.I.	THETA	ALPHA	R.I.	THETA	ALPHA	R.I.	THETA	ALPHA	R.I.	THETA	ALPHA	R.I.
JUN 22	-7.23	7.23	1021.3	-7.23	7.23	1014.4	-7.23	7.23	998.7	-7.23	7.23	975.6	-7.23	7.23	947.1	-7.23	7.23	913.5
JUN 1	-7.14	7.14	1001.8	-7.14	7.14	990.8	-7.14	7.14	971.3	-7.14	7.14	949.9	-7.14	7.14	925.5	-7.14	7.14	901.1
JUN 18	-6.98	6.98	967.6	-6.98	6.98	949.8	-6.98	6.98	924.1	-6.98	6.98	892.2	-6.98	6.98	856.0	-6.98	6.98	820.0
MAY 3	-6.78	6.75	917.4	-6.78	6.72	890.4	-6.78	6.67	856.4	-6.78	6.62	817.3	-6.78	6.56	776.9	-6.78	6.56	741.9
MAY 10	-6.54	6.46	852.2	-6.54	6.36	814.7	-6.54	6.25	771.6	-6.54	6.12	724.8	-6.54	5.96	676.1	-6.54	5.96	641.1
APR 19	-6.27	6.14	775.2	-6.27	5.98	727.3	-6.27	5.80	675.3	-6.27	5.62	621.3	-6.27	5.46	571.3	-6.27	5.46	536.3
APR 4	-6.00	5.81	689.1	-6.00	5.58	631.7	-6.00	5.33	572.0	-6.00	5.03	512.2	-6.00	4.69	454.4	-6.00	4.69	419.4
MAR 21	-5.73	5.48	600.2	-5.73	5.19	535.0	-5.73	4.86	469.5	-5.73	4.48	406.0	-5.73	4.06	346.5	-5.73	4.06	311.5
MAR 7	-5.46	5.16	514.8	-5.46	4.81	444.1	-5.46	4.41	375.1	-5.46	3.93	310.0	-5.46	3.43	250.8	-5.46	3.43	215.8
FEB 20	-5.22	4.86	438.5	-5.22	4.45	364.5	-5.22	3.98	293.9	-5.22	3.49	229.2	-5.22	2.82	170.2	-5.22	2.82	135.2
FEB 7	-5.00	4.61	377.3	-4.98	4.15	301.8	-4.96	3.61	231.3	-4.93	2.99	168.1	-4.89	2.28	114.7	-4.89	2.28	89.7
JAN 23	-4.81	4.43	334.7	-4.75	3.92	258.9	-4.68	3.33	189.3	-4.58	2.65	128.2	-4.45	1.84	77.7	-4.45	1.84	52.7
JAN 10	-4.60	4.21	301.1	-4.61	3.78	234.4	-4.50	3.16	165.7	-4.36	2.43	106.4	-4.16	1.55	58.5	-4.16	1.55	33.5
DEC 22	-4.37	3.98	268.5	-4.38	3.55	200.0	-4.25	2.82	136.2	-4.05	2.00	76.7	-3.75	1.11	27.7	-3.75	1.11	2.7
DEC 9	-4.14	3.75	235.0	-4.15	3.32	165.5	-4.02	2.50	107.0	-3.82	1.67	57.2	-3.52	0.78	8.2	-3.52	0.78	3.2
DEC 2	-3.91	3.52	202.1	-3.92	2.99	136.0	-3.79	2.17	77.5	-3.59	1.34	27.8	-3.29	0.49	2.9	-3.29	0.49	0.0
NOV 19	-3.68	3.29	178.6	-3.69	2.76	106.5	-3.56	1.94	58.0	-3.36	1.11	9.3	-3.06	0.29	0.0	-3.06	0.29	0.0
NOV 6	-3.45	3.06	155.1	-3.46	2.53	85.0	-3.34	1.71	48.5	-3.14	0.88	19.8	-2.84	0.07	0.0	-2.84	0.07	0.0
OCT 22	-3.22	2.82	132.2	-3.23	2.30	64.9	-3.11	1.48	35.4	-2.91	0.65	11.1	-2.61	0.04	0.0	-2.61	0.04	0.0
OCT 9	-3.00	2.59	109.3	-3.01	2.07	55.8	-2.89	1.25	26.9	-2.69	0.42	6.2	-2.39	0.03	0.0	-2.39	0.03	0.0
OCT 2	-2.77	2.36	96.4	-2.78	1.84	46.7	-2.66	1.03	17.4	-2.46	0.29	2.7	-2.16	0.02	0.0	-2.16	0.02	0.0
SEP 19	-2.54	2.14	83.0	-2.55	1.62	37.2	-2.43	0.80	12.9	-2.23	0.19	0.5	-1.93	0.01	0.0	-1.93	0.01	0.0
SEP 6	-2.31	1.91	70.1	-2.32	1.49	28.5	-2.21	0.59	4.9	-2.01	0.09	0.1	-1.71	0.00	0.0	-1.71	0.00	0.0
SEP 23	-2.08	1.71	57.2	-2.09	1.07	19.0	-1.98	0.19	1.9	-1.78	0.01	0.0	-1.48	0.00	0.0	-1.48	0.00	0.0
SEP 10	-1.85	1.44	48.3	-1.86	0.73	9.3	-1.75	0.09	0.9	-1.55	0.00	0.0	-1.25	0.00	0.0	-1.25	0.00	0.0
SEP 27	-1.62	1.21	39.4	-1.63	0.42	3.2	-1.52	0.00	0.4	-1.32	0.00	0.0	-1.02	0.00	0.0	-1.02	0.00	0.0
SEP 14	-1.39	0.99	30.5	-1.40	0.13	0.5	-1.30	0.00	0.1	-1.10	0.00	0.0	-0.80	0.00	0.0	-0.80	0.00	0.0
SEP 1	-1.16	0.78	21.6	-1.17	0.00	0.0	-1.07	0.00	0.0	-0.87	0.00	0.0	-0.57	0.00	0.0	-0.57	0.00	0.0
AUG 19	-0.93	0.57	12.7	-0.94	0.00	0.0	-0.84	0.00	0.0	-0.64	0.00	0.0	-0.34	0.00	0.0	-0.34	0.00	0.0
AUG 6	-0.70	0.39	4.8	-0.71	0.00	0.0	-0.61	0.00	0.0	-0.41	0.00	0.0	-0.11	0.00	0.0	-0.11	0.00	0.0
AUG 23	-0.47	0.23	1.9	-0.48	0.00	0.0	-0.38	0.00	0.0	-0.18	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0
AUG 10	-0.24	0.08	0.8	-0.25	0.00	0.0	-0.15	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0
AUG 27	-0.01	0.00	0.0	-0.02	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0
AUG 14	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0
AUG 1	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0
JUL 19	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0
JUL 6	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0
JUL 23	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0
JUL 10	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0
JUL 27	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0
JUN 19	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0
JUN 6	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0
JUN 23	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0
JUN 10	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0
JUN 27	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0
MAY 19	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0
MAY 6	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0
MAY 23	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0
MAY 10	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0
MAY 27	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0
APR 19	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0
APR 6	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0
APR 23	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0
APR 10	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0
APR 27	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0
MAR 19	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0
MAR 6	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0
MAR 23	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0
MAR 10	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0
MAR 27	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0
FEB 19	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0
FEB 6	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0
FEB 23	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0
FEB 10	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0
FEB 27	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0
JAN 19	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0
JAN 6	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0
JAN 23	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0
JAN 10	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0
JAN 27	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0
DEC 19	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00		

NOTE - FOR ASPECTS WITH WEST COMPONENTS, THE TIME AND SIGN OF SR AND SS ARE REVERSED.

LATITUDE 36 N
ASPECT SSE - SSW

	10 PCT						20 PCT						30 PCT						40 PCT						50 PCT					
	SLOPE			SLOPE			SLOPE			SLOPE			SLOPE			SLOPE			SLOPE			SLOPE			SLOPE			SLOPE		
	THETA	ALPHA	LY	SR	SS	LY	THETA	ALPHA	LY	SR	SS	LY	THETA	ALPHA	LY	SR	SS	LY	THETA	ALPHA	LY	SR	SS	LY	THETA	ALPHA	LY	SR	SS	LY
JUN 22	-7.17	6.83	1007.0	-7.11	6.48	989.5	-7.07	6.17	966.5	-7.03	5.90	938.9	-6.99	5.65	908.1	-6.97	5.40	878.7	-6.90	5.12	848.3	-6.86	4.86	818.9	-6.82	4.60	789.5	-6.77	4.35	760.1
JUN 1 JUL 12	-7.09	6.75	996.3	-7.06	6.42	983.0	-7.02	6.13	963.7	-6.98	5.88	936.2	-6.94	5.63	906.8	-6.91	5.38	877.4	-6.87	5.13	848.0	-6.83	4.88	818.7	-6.79	4.63	789.4	-6.75	4.38	760.0
MAY 18 JUL 27	-6.97	6.63	976.7	-6.96	6.32	970.4	-6.95	6.05	957.7	-6.94	5.78	930.1	-6.91	5.53	900.7	-6.88	5.28	871.3	-6.84	5.03	841.9	-6.80	4.78	812.5	-6.76	4.53	783.1	-6.72	4.28	753.7
MAY 3 AUG 10	-6.78	6.47	946.5	-6.78	6.19	949.8	-6.78	5.95	946.1	-6.78	5.68	916.8	-6.74	5.43	887.4	-6.70	5.18	858.0	-6.66	4.93	828.6	-6.62	4.68	799.2	-6.58	4.43	769.8	-6.54	4.18	740.4
APR 19 AUG 25	-6.54	6.27	904.4	-6.54	6.03	919.1	-6.54	5.82	926.3	-6.54	5.56	891.9	-6.50	5.31	862.5	-6.46	5.06	833.1	-6.42	4.81	803.7	-6.38	4.56	774.3	-6.34	4.31	744.9	-6.30	4.06	715.5
APR 4 SEP 9	-6.27	6.05	851.5	-6.27	5.86	878.2	-6.27	5.69	896.9	-6.27	5.43	867.5	-6.23	5.18	838.1	-6.19	4.93	808.7	-6.15	4.68	779.3	-6.11	4.43	749.9	-6.07	4.18	720.5	-6.03	3.93	691.1
MAR 21 SEP 23	-6.00	5.83	788.3	-6.00	5.68	826.7	-6.00	5.55	856.7	-6.00	5.43	878.7	-6.00	5.33	893.2	-5.97	5.18	863.8	-5.93	4.93	834.4	-5.89	4.68	805.0	-5.85	4.43	775.6	-5.81	4.18	746.2
MAR 7 OCT 8	-5.73	5.61	719.2	-5.73	5.50	768.1	-5.73	5.41	808.4	-5.73	5.33	840.3	-5.73	5.26	864.3	-5.73	5.21	878.2	-5.73	5.19	882.2	-5.73	5.18	886.2	-5.73	5.17	890.2	-5.73	5.16	894.2
FEB 7 NOV 5	-5.46	5.39	649.4	-5.46	5.33	706.8	-5.46	5.28	755.8	-5.46	5.23	796.1	-5.46	5.19	828.2	-5.46	5.16	850.3	-5.46	5.14	872.4	-5.46	5.12	894.5	-5.46	5.10	916.6	-5.46	5.08	938.7
FEB 20 OCT 22	-5.22	5.20	584.0	-5.22	5.17	647.8	-5.22	5.15	703.4	-5.22	5.12	750.3	-5.22	5.10	797.4	-5.22	5.08	844.5	-5.22	5.06	891.6	-5.22	5.04	938.7	-5.22	5.02	985.8	-5.22	5.00	1032.9
JAN 23 NOV 19	-5.02	5.02	529.6	-5.02	5.02	597.7	-5.02	5.02	657.8	-5.02	5.02	715.9	-5.02	5.02	774.0	-5.02	5.02	832.1	-5.02	5.02	890.2	-5.02	5.02	948.3	-5.02	5.02	1006.4	-5.02	5.02	1064.5
JAN 10 DEC 3	-4.86	4.86	490.4	-4.86	4.86	561.0	-4.86	4.86	623.8	-4.86	4.86	686.6	-4.86	4.86	750.3	-4.86	4.86	814.0	-4.86	4.86	877.7	-4.86	4.86	941.4	-4.86	4.86	1005.8	-4.86	4.86	1070.2
DEC 22	-4.77	4.77	467.3	-4.77	4.77	539.0	-4.77	4.77	603.1	-4.77	4.77	667.2	-4.77	4.77	731.3	-4.77	4.77	795.4	-4.77	4.77	859.5	-4.77	4.77	923.6	-4.77	4.77	987.7	-4.77	4.77	1051.8
JUN 22	-6.96	5.44	875.5	-6.93	5.24	842.3	-6.91	5.06	809.4	-6.89	4.90	777.5	-6.86	4.76	746.9	-6.84	4.58	716.3	-6.82	4.40	685.7	-6.80	4.22	655.1	-6.78	4.04	624.5	-6.76	3.86	593.9
JUN 1 JUL 12	-6.95	5.42	882.2	-6.93	5.23	851.3	-6.91	5.07	820.5	-6.89	4.91	790.4	-6.88	4.77	761.3	-6.86	4.59	731.7	-6.84	4.41	702.1	-6.82	4.23	671.5	-6.80	4.05	641.9	-6.78	3.87	612.3
MAY 18 JUL 27	-6.92	5.40	892.2	-6.92	5.22	865.5	-6.91	5.07	838.3	-6.91	4.92	811.3	-6.90	4.79	785.0	-6.89	4.61	755.4	-6.88	4.43	725.8	-6.86	4.25	696.2	-6.84	4.07	666.6	-6.82	3.89	637.0
MAY 3 AUG 10	-6.78	5.37	903.4	-6.78	5.21	882.7	-6.78	5.07	860.8	-6.78	4.94	838.4	-6.78	4.80	815.9	-6.76	4.62	786.3	-6.74	4.44	756.7	-6.72	4.26	727.1	-6.70	4.08	697.5	-6.68	3.90	667.9
APR 19 AUG 25	-6.54	5.33	911.1	-6.54	5.19	897.7	-6.54	5.07	882.2	-6.54	4.96	865.5	-6.54	4.82	842.8	-6.52	4.64	813.2	-6.50	4.46	783.6	-6.48	4.28	754.0	-6.46	4.10	724.4	-6.44	3.92	694.8
APR 4 SEP 9	-6.27	5.28	911.6	-6.27	5.17	906.3	-6.27	5.07	898.0	-6.27	4.99	887.6	-6.27	4.90	877.2	-6.27	4.81	866.8	-6.27	4.72	856.0	-6.27	4.63	845.2	-6.27	4.54	834.4	-6.27	4.45	823.6
MAR 21 SEP 23	-6.00	5.24	901.5	-6.00	5.15	904.6	-6.00	5.08	903.8	-6.00	5.01	900.0	-6.00	4.95	894.0	-6.00	4.88	889.2	-6.00	4.81	884.4	-6.00	4.74	879.6	-6.00	4.67	874.8	-6.00	4.60	870.0
MAR 7 OCT 8	-5.73	5.19	881.3	-5.73	5.13	892.4	-5.73	5.08	898.7	-5.73	5.03	901.4	-5.73	4.99	901.2	-5.73	4.95	901.4	-5.73	4.91	901.4	-5.73	4.87	901.4	-5.73	4.83	901.4	-5.73	4.79	901.4
FEB 20 OCT 22	-5.46	5.15	852.8	-5.46	5.11	870.9	-5.46	5.08	883.7	-5.46	5.06	892.2	-5.46	5.03	897.3	-5.46	5.00	901.4	-5.46	4.97	901.4	-5.46	4.94	901.4	-5.46	4.91	901.4	-5.46	4.88	901.4
FEB 7 NOV 5	-5.22	5.11	819.6	-5.22	5.10	843.5	-5.22	5.09	861.6	-5.22	5.08	875.0	-5.22	5.07	888.3	-5.22	5.06	901.4	-5.22	5.05	914.7	-5.22	5.04	928.0	-5.22	5.03	941.3	-5.22	5.02	954.6
JAN 23 NOV 19	-5.02	5.02	787.8	-5.02	5.02	816.0	-5.02	5.02	838.1	-5.02	5.02	859.2	-5.02	5.02	880.3	-5.02	5.02	901.4	-5.02	5.02	922.5	-5.02	5.02	943.6	-5.02	5.02	964.7	-5.02	5.02	985.8
JAN 10 DEC 3	-4.86	4.86	762.2	-4.86	4.86	793.1	-4.86	4.86	817.8	-4.86	4.86	842.9	-4.86	4.86	868.0	-4.86	4.86	893.1	-4.86	4.86	918.2	-4.86	4.86	943.3	-4.86	4.86	968.4	-4.86	4.86	993.5
DEC 22	-4.77	4.77	745.8	-4.77	4.77	778.2	-4.77	4.77	804.2	-4.77	4.77	829.3	-4.77	4.77	854.4	-4.77	4.77	879.5	-4.77	4.77	904.6	-4.77	4.77	929.7	-4.77	4.77	954.8	-4.77	4.77	980.0

NOTE - FOR ASPECTS WITH WEST COMPONENTS, THE TIME AND SIGN OF SR AND SS ARE REVERSED.

LATITUDE 36 N
ASPECT NE - NW

		SLOPE						SLOPE						SLOPE						SLOPE						SLOPE					
		10 PCT			20 PCT			30 PCT			40 PCT			50 PCT			60 PCT			70 PCT			80 PCT			90 PCT			100 PCT		
		THETA	ALPHA	LY	SR	SS	LY	THETA	ALPHA	LY	SR	SS	LY	THETA	ALPHA	LY	SR	SS	LY	THETA	ALPHA	LY	SR	SS	LY	THETA	ALPHA	LY	SR	SS	LY
JUN 22		-7.23	7.07	1019.7	-7.23	6.89	1011.7	-7.23	6.68	995.7	-7.23	6.44	973.2	-7.23	6.17	946.2	-7.23	5.89	919.0	-7.23	5.61	891.8	-7.23	5.34	864.6	-7.23	5.06	837.4	-7.23	4.78	810.2
JUN 1	JUL 12	-7.14	6.96	1001.3	-7.14	6.77	990.4	-7.14	6.54	971.9	-7.14	6.31	949.4	-7.14	6.03	922.2	-7.14	5.75	895.0	-7.14	5.47	867.8	-7.14	5.19	840.6	-7.14	4.91	813.4	-7.14	4.63	786.2
MAY 18	JUL 27	-6.98	6.79	968.9	-6.98	6.56	953.3	-6.98	6.31	930.8	-6.98	6.02	903.2	-6.98	5.74	876.0	-6.98	5.46	848.8	-6.98	5.18	821.6	-6.98	4.90	794.4	-6.98	4.62	767.2	-6.98	4.34	740.0
MAY 3	AUG 10	-6.78	6.55	921.3	-6.78	6.29	899.3	-6.78	6.00	871.5	-6.78	5.68	839.9	-6.78	5.39	812.7	-6.78	5.11	785.5	-6.78	4.83	758.3	-6.78	4.55	731.1	-6.78	4.27	703.9	-6.78	3.99	676.7
APR 19	AUG 25	-6.54	6.27	859.0	-6.54	5.97	829.8	-6.54	5.64	796.3	-6.54	5.28	760.5	-6.54	4.99	733.3	-6.54	4.71	706.1	-6.54	4.43	678.9	-6.54	4.15	651.7	-6.54	3.87	624.5	-6.54	3.59	597.3
APR 4	SEP 9	-6.27	5.96	785.0	-6.27	5.62	748.6	-6.27	5.25	709.7	-6.27	4.86	670.0	-6.27	4.47	631.4	-6.27	4.08	592.8	-6.27	3.70	554.2	-6.27	3.31	515.6	-6.27	2.93	477.0	-6.27	2.54	438.4
MAR 21	SEP 23	-6.00	5.65	701.8	-6.00	5.26	658.9	-6.00	4.85	615.2	-6.00	4.42	572.6	-6.00	4.03	529.0	-6.00	3.64	485.4	-6.00	3.25	446.8	-6.00	2.86	408.2	-6.00	2.47	369.6	-6.00	2.08	331.0
MAR 7	OCT 8	-5.73	5.33	615.3	-5.73	4.91	567.2	-5.73	4.45	520.1	-5.73	3.98	475.8	-5.73	3.51	431.4	-5.73	3.04	387.0	-5.73	2.57	342.6	-5.73	2.10	298.2	-5.73	1.63	253.8	-5.73	1.16	209.4
FEB 20	OCT 22	-5.46	5.03	531.9	-5.46	4.56	480.0	-5.46	4.07	433.0	-5.46	3.55	386.2	-5.46	3.08	341.8	-5.46	2.61	297.4	-5.46	2.14	253.0	-5.46	1.67	208.6	-5.46	1.20	164.2	-5.46	0.73	119.8
FEB 7	NOV 5	-5.22	4.75	456.9	-5.22	4.24	402.9	-5.22	3.71	353.2	-5.22	3.16	309.0	-5.22	2.61	264.6	-5.22	2.06	220.2	-5.22	1.51	175.8	-5.22	0.96	131.4	-5.22	0.41	87.0	-5.22	-0.14	42.6
JAN 23	NOV 19	-5.02	4.51	396.5	-5.02	3.97	341.6	-5.02	3.42	292.1	-5.02	2.81	249.1	-5.02	2.26	204.7	-5.02	1.71	160.3	-5.02	1.16	115.9	-5.02	0.61	71.5	-5.02	0.06	27.1	-5.02	-0.49	-17.3
JAN 10	DEC 3	-4.86	4.33	354.3	-4.86	3.76	299.2	-4.86	3.16	250.3	-4.86	2.55	208.6	-4.86	1.94	164.4	-4.86	1.33	120.0	-4.86	0.72	75.6	-4.86	0.11	31.2	-4.86	-0.48	-13.2	-4.86	-1.07	-29.4
DEC 22		-4.77	4.23	329.7	-4.77	3.64	274.8	-4.77	3.02	226.5	-4.77	2.39	185.7	-4.77	1.77	152.7	-4.77	1.16	108.3	-4.77	0.55	63.9	-4.77	-0.06	19.5	-4.77	-0.65	-24.6	-4.77	-1.24	-30.7
		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.	
		253.3303	.4819		239.829	.4563		226.038	.4301		212.499	.4043		199.685	.3799		186.972	.3545		174.259	.3291		161.546	.3037		148.833	.2783		136.120	.2529	
JUN 22		-7.23	5.87	916.6	-7.23	5.54	886.0	-7.23	5.20	855.8	-7.23	4.85	826.9	-7.23	4.51	799.7	-7.23	4.16	770.8	-7.23	3.82	741.9	-7.23	3.47	713.0	-7.23	3.13	684.1	-7.23	2.78	655.2
JUN 1	JUL 12	-7.14	5.68	888.4	-7.14	5.34	857.2	-7.14	4.99	826.8	-7.14	4.64	797.9	-7.14	4.29	770.0	-7.14	3.94	741.1	-7.14	3.59	712.2	-7.14	3.24	683.3	-7.14	2.89	654.4	-7.14	2.54	625.5
MAY 18	JUL 27	-6.98	5.37	840.3	-6.98	5.02	808.3	-6.98	4.66	777.5	-6.98	4.30	748.7	-6.98	3.95	720.0	-6.98	3.60	691.2	-6.98	3.25	662.3	-6.98	2.89	633.5	-6.98	2.54	604.6	-6.98	2.19	575.7
MAY 3	AUG 10	-6.78	4.97	772.5	-6.78	4.59	739.6	-6.78	4.22	708.7	-6.78	3.86	680.2	-6.78	3.51	651.3	-6.78	3.16	622.4	-6.78	2.80	593.5	-6.78	2.45	564.6	-6.78	2.10	535.7	-6.78	1.74	506.8
APR 19	AUG 25	-6.54	4.51	688.7	-6.54	4.11	655.3	-6.54	3.73	624.6	-6.54	3.36	595.0	-6.54	3.01	572.2	-6.54	2.66	543.3	-6.54	2.30	514.4	-6.54	1.95	485.5	-6.54	1.60	456.6	-6.54	1.24	427.7
APR 4	SEP 9	-6.27	4.02	595.0	-6.27	3.61	561.7	-6.27	3.21	531.8	-6.27	2.83	505.5	-6.27	2.48	482.3	-6.27	2.13	453.4	-6.27	1.77	424.5	-6.27	1.42	395.6	-6.27	1.06	366.7	-6.27	0.71	337.8
MAR 21	SEP 23	-6.00	3.52	496.2	-6.00	3.09	463.7	-6.00	2.67	435.4	-6.00	2.29	411.0	-6.00	1.94	389.9	-6.00	1.59	360.0	-6.00	1.24	331.1	-6.00	0.89	302.2	-6.00	0.54	273.3	-6.00	0.19	244.4
MAR 7	OCT 8	-5.73	3.02	399.9	-5.73	2.56	369.1	-5.73	2.14	343.0	-5.73	1.75	320.9	-5.73	1.40	302.3	-5.73	1.05	273.4	-5.73	0.70	244.5	-5.73	0.35	215.6	-5.73	-0.01	186.7	-5.73	-0.36	157.8
FEB 20	OCT 22	-5.46	2.53	312.8	-5.46	2.06	284.3	-5.46	1.62	260.8	-5.46	1.22	241.5	-5.46	0.87	225.5	-5.46	0.52	196.6	-5.46	0.17	167.7	-5.46	-0.18	138.8	-5.46	-0.53	109.9	-5.46	-0.88	81.0
FEB 7	NOV 5	-5.22	2.08	239.5	-5.22	1.58	213.7	-5.22	1.13	192.9	-5.22	0.72	176.3	-5.22	0.37	159.7	-5.22	-0.08	132.0	-5.22	-0.43	103.1	-5.22	-0.78	74.2	-5.22	-1.13	45.3	-5.22	-1.48	16.4
JAN 23	NOV 19	-5.02	1.67	184.0	-5.02	1.16	160.8	-5.02	0.69	142.6	-5.02	0.28	128.4	-5.02	-0.07	117.3	-5.02	-0.42	88.1	-5.02	-0.77	59.2	-5.02	-1.12	30.3	-5.02	-1.47	1.4	-5.02	-1.82	-27.5
JAN 10	DEC 3	-4.86	1.37	147.2	-4.86	.83	126.1	-4.86	.36	109.9	-4.86	-0.06	97.6	-4.86	-0.41	68.7	-4.86	-0.76	39.8	-4.86	-1.11	10.9	-4.86	-1.46	-18.0	-4.86	-1.81	-49.1	-4.86	-2.16	-80.2
DEC 22		-4.77	1.18	126.8	-4.77	.63	107.0	-4.77	.14	92.1	-4.77	-0.27	80.9	-4.77	-0.62	52.0	-4.77	-0.97	23.1	-4.77	-1.32	-6.8	-4.77	-1.67	-37.9	-4.77	-2.02	-69.0	-4.77	-2.37	-100.1
		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.	
		187.8916	.3575		177.330	.3374		167.973	.3196		159.879	.3040		152.609	.2894		145.440	.2748		138.271	.2602		131.102	.2456		123.933	.2310		116.764	.2164	

NOTE - FOR ASPECTS WITH WEST COMPONENTS, THE TIME AND SIGN OF SR AND SS ARE REVERSED.

LATITUDE 36 N
ASPECT SE - SW

		SLOPE																	
		10 PCT			20 PCT			30 PCT			40 PCT			50 PCT					
		THETA	ALPHA	LY	THETA	ALPHA	LY	THETA	ALPHA	LY	THETA	ALPHA	LY	THETA	ALPHA	LY	THETA	ALPHA	LY
		31.9	4.8		27.7	9.0		23.5	12.8		19.5	16.2		15.7	19.2				
		SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY
JUN 22		-7.23	6.73	1009.9	-7.23	6.28	996.9	-7.23	5.87	979.8	-7.23	5.51	959.2	-7.23	5.19	935.9			
JUN 1 JUL 12		-7.14	6.65	998.1	-7.14	6.21	988.4	-7.14	5.82	974.3	-7.14	5.47	956.5	-7.14	5.15	935.7			
MAY 18 JUL 27		-6.98	6.52	976.9	-6.98	6.11	972.6	-6.98	5.73	963.5	-6.98	5.40	950.3	-6.98	5.10	933.8			
MAY 3 AUG 10		-6.78	6.35	944.3	-6.78	5.96	947.4	-6.78	5.61	935.3	-6.78	5.30	938.5	-6.78	5.02	927.7			
APR 19 AUG 25		-6.54	6.14	899.5	-6.54	5.79	911.3	-6.54	5.47	917.4	-6.54	5.18	918.2	-6.54	4.93	914.3			
APR 4 SEP 9		-6.27	5.92	843.7	-6.27	5.60	864.6	-6.27	5.31	879.4	-6.27	5.06	888.3	-6.27	4.83	891.9			
MAR 21 SEP 23		-6.00	5.68	777.6	-6.00	5.40	807.3	-6.00	5.15	830.6	-6.00	4.92	847.5	-6.00	4.72	858.6			
MAR 7 OCT 8		-5.73	5.45	706.0	-5.73	5.20	743.6	-5.73	4.98	774.5	-5.73	4.79	798.7	-5.73	4.62	816.6			
FEB 20 OCT 22		-5.46	5.22	634.1	-5.46	5.01	678.1	-5.46	4.83	715.3	-5.46	4.66	745.5	-5.46	4.52	769.2			
FEB 7 NOV 5		-5.22	5.02	567.3	-5.22	4.84	615.8	-5.22	4.68	657.7	-5.22	4.54	692.6	-5.22	4.42	720.8			
JAN 23 NOV 19		-5.02	4.84	511.9	-5.02	4.69	563.5	-5.02	4.56	608.5	-5.02	4.45	646.7	-5.02	4.35	678.0			
JAN 10 DEC 3		-4.86	4.71	472.2	-4.86	4.59	525.5	-4.86	4.47	572.4	-4.86	4.38	612.5	-4.86	4.29	645.8			
DEC 22		-4.77	4.64	448.8	-4.77	4.52	502.9	-4.77	4.42	550.8	-4.77	4.33	591.8	-4.77	4.26	626.2			
		YEAR	R.i.e.		YEAR	R.i.e.		YEAR	R.i.e.		YEAR	R.i.e.		YEAR	R.i.e.		YEAR	R.i.e.	
		276.797	5266		285.822	5438		292.712	5569		297.501	5660		300.375	5715				
		60 PCT			70 PCT			80 PCT			90 PCT			100 PCT					
		THETA	ALPHA	LY	THETA	ALPHA	LY	THETA	ALPHA	LY	THETA	ALPHA	LY	THETA	ALPHA	LY	THETA	ALPHA	LY
		12.1	21.8		8.8	24.2		5.8	26.4		3.1	28.3		.6	30.0				
		SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY
JUN 22		-7.23	4.90	911.1	-7.23	4.64	885.6	-7.23	4.41	860.1	-7.23	4.21	835.3	-7.23	4.02	811.3			
JUN 1 JUL 12		-7.14	4.87	913.1	-7.14	4.62	889.5	-7.14	4.40	865.7	-7.14	4.20	842.3	-7.14	4.02	819.5			
MAY 18 JUL 27		-6.98	4.83	914.9	-6.98	4.59	894.5	-6.98	4.38	873.5	-6.98	4.19	852.6	-6.98	4.01	831.9			
MAY 3 AUG 10		-6.78	4.77	913.9	-6.78	4.55	898.1	-6.78	4.35	881.1	-6.78	4.17	863.6	-6.78	4.01	846.0			
APR 19 AUG 25		-6.54	4.70	906.8	-6.54	4.50	896.5	-6.54	4.32	884.3	-6.54	4.16	871.0	-6.54	4.01	857.0			
APR 4 SEP 9		-6.27	4.62	891.1	-6.27	4.44	886.8	-6.27	4.28	879.9	-6.27	4.14	871.3	-6.27	4.00	861.4			
MAR 21 SEP 23		-6.00	4.54	864.5	-6.00	4.38	866.3	-6.00	4.24	864.9	-6.00	4.12	861.1	-6.00	4.00	855.6			
MAR 7 OCT 8		-5.73	4.46	828.8	-5.73	4.33	836.4	-5.73	4.20	840.1	-5.73	4.09	841.0	-5.73	4.00	839.6			
FEB 20 OCT 22		-5.46	4.39	786.8	-5.46	4.27	799.4	-5.46	4.17	807.7	-5.46	4.08	812.6	-5.46	3.99	815.0			
FEB 7 NOV 5		-5.22	4.32	752.7	-5.22	4.22	759.3	-5.22	4.13	771.4	-5.22	4.06	779.7	-5.22	3.99	785.2			
JAN 23 NOV 19		-5.02	4.26	703.0	-5.02	4.18	722.5	-5.02	4.11	737.3	-5.02	4.04	748.2	-5.02	3.98	756.1			
JAN 10 DEC 3		-4.86	4.21	672.8	-4.86	4.15	694.2	-4.86	4.09	710.8	-4.86	4.03	723.3	-4.86	3.98	732.7			
DEC 22		-4.77	4.19	654.2	-4.77	4.13	676.6	-4.77	4.07	694.1	-4.77	4.02	707.6	-4.77	3.98	717.9			
		YEAR	R.i.e.		YEAR	R.i.e.		YEAR	R.i.e.		YEAR	R.i.e.		YEAR	R.i.e.		YEAR	R.i.e.	
		301.608	5738		301.519	5737		300.419	5716		298.586	5681		296.232	5636				

NOTE - FOR ASPECTS WITH WEST COMPONENTS, THE TIME AND SIGN OF SR AND SS ARE REVERSED.

LATITUDE 36 N
ASPECT ENE - WNW

	10 PCT						20 PCT						30 PCT						40 PCT						50 PCT					
	SLOPE			SLOPE			SLOPE			SLOPE			SLOPE			SLOPE			SLOPE			SLOPE			SLOPE			SLOPE		
	THETA	ALPHA	LY	SR	SS	LY	THETA	ALPHA	LY	SR	SS	LY	THETA	ALPHA	LY	SR	SS	LY	THETA	ALPHA	LY	SR	SS	LY	THETA	ALPHA	LY	SR	SS	LY
JUN 22	-7.23	6.88	1017.8	-7.23	6.50	1010.3	-7.23	6.10	997.0	-7.23	5.69	979.3	-7.23	5.28	959.0	-7.23	4.87	939.0	-7.23	4.46	919.0	-7.23	4.05	899.0	-7.23	3.64	879.0	-7.23	3.23	859.0
JUN 1 JUL 12	-7.14	6.78	1001.0	-7.14	6.39	992.2	-7.14	5.99	977.9	-7.14	5.59	959.7	-7.14	5.18	940.5	-7.14	4.77	921.3	-7.14	4.36	902.1	-7.14	3.95	882.9	-7.14	3.54	863.7	-7.14	3.13	844.5
MAY 18 JUL 27	-6.98	6.61	971.3	-6.98	6.22	960.3	-6.98	5.83	945.5	-6.98	5.44	926.3	-6.98	5.05	907.1	-6.98	4.66	887.9	-6.98	4.27	868.7	-6.98	3.88	849.5	-6.98	3.49	830.3	-6.98	3.10	811.1
MAY 3 AUG 10	-6.78	6.39	927.3	-6.78	5.98	913.3	-6.78	5.56	895.5	-6.78	5.15	877.1	-6.78	4.74	858.7	-6.78	4.33	840.3	-6.78	3.92	821.9	-6.78	3.51	803.5	-6.78	3.10	785.1	-6.78	2.69	766.7
APR 19 AUG 25	-6.54	6.13	869.1	-6.54	5.70	852.0	-6.54	5.27	832.0	-6.54	4.84	812.5	-6.54	4.42	793.0	-6.54	4.00	773.5	-6.54	3.58	754.1	-6.54	3.16	734.7	-6.54	2.74	715.3	-6.54	2.32	695.9
APR 4 SEP 9	-6.27	5.85	799.4	-6.27	5.40	775.1	-6.27	4.96	751.1	-6.27	4.52	726.7	-6.27	4.08	702.3	-6.27	3.64	677.9	-6.27	3.20	653.5	-6.27	2.76	629.1	-6.27	2.32	604.7	-6.27	1.88	580.3
MAR 21 SEP 23	-6.00	5.55	720.2	-6.00	5.09	697.0	-6.00	4.63	673.4	-6.00	4.19	649.0	-6.00	3.75	624.6	-6.00	3.31	600.2	-6.00	2.87	575.8	-6.00	2.43	551.4	-6.00	2.00	527.0	-6.00	1.56	502.6
MAR 7 OCT 8	-5.73	5.26	637.1	-5.73	4.78	611.7	-5.73	4.31	587.0	-5.73	3.85	563.9	-5.73	3.39	540.8	-5.73	2.93	517.7	-5.73	2.47	494.6	-5.73	2.01	471.5	-5.73	1.55	448.3	-5.73	1.09	425.1
FEB 20 OCT 22	-5.46	4.98	556.4	-5.46	4.48	529.3	-5.46	4.00	504.2	-5.46	3.54	481.4	-5.46	3.08	458.5	-5.46	2.62	435.6	-5.46	2.16	412.7	-5.46	1.70	389.8	-5.46	1.24	366.9	-5.46	0.78	344.0
FEB 7 NOV 5	-5.22	4.71	483.2	-5.22	4.20	455.3	-5.22	3.71	430.2	-5.22	3.24	408.1	-5.22	2.77	386.0	-5.22	2.30	363.9	-5.22	1.83	341.8	-5.22	1.37	319.7	-5.22	0.91	297.6	-5.22	0.45	275.5
JAN 23 NOV 19	-5.02	4.49	423.9	-5.02	3.97	395.7	-5.02	3.46	370.2	-5.02	2.99	349.6	-5.02	2.52	328.1	-5.02	2.05	307.0	-5.02	1.58	285.9	-5.02	1.11	264.8	-5.02	0.64	243.7	-5.02	0.18	222.6
JAN 10 DEC 3	-4.86	4.33	382.1	-4.86	3.79	354.0	-4.86	3.28	329.6	-4.86	2.80	309.0	-4.86	2.32	288.5	-4.86	1.84	267.4	-4.86	1.37	246.3	-4.86	0.90	225.2	-4.86	0.43	204.1	-4.86	-0.04	183.0
DEC 22	-4.77	4.23	357.8	-4.77	3.69	329.8	-4.77	3.17	305.8	-4.77	2.69	285.6	-4.77	2.21	264.5	-4.77	1.73	243.4	-4.77	1.26	222.3	-4.77	0.79	201.2	-4.77	0.32	180.1	-4.77	-0.15	159.0

NOTE - FOR ASPECTS WITH WEST COMPONENTS, THE TIME AND SIGN OF SR AND SS ARE REVERSED.

LATITUDE 36 N
ASPECT ESE - WSW

	10 PCT						SLOPE						20 PCT						30 PCT						40 PCT						50 PCT					
	THETA			ALPHA			THETA			ALPHA			THETA			ALPHA			THETA			ALPHA			THETA			ALPHA			THETA			ALPHA		
	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY			
JUN 22	-7.23	6.70	1013.0	-7.23	6.20	1003.8	-7.23	5.73	991.2	-7.23	5.31	975.8	-7.23	5.31	975.8	-7.23	5.31	975.8	-7.23	5.31	975.8	-7.23	5.31	975.8	-7.23	5.31	975.8	-7.23	5.31	975.8	-7.23	5.31	975.8	-7.23	5.31	975.8
JUN 1 JUL 12	-7.14	6.61	999.7	-7.14	6.12	992.5	-7.14	5.67	981.7	-7.14	5.25	968.0	-7.14	5.25	968.0	-7.14	5.25	968.0	-7.14	5.25	968.0	-7.14	5.25	968.0	-7.14	5.25	968.0	-7.14	5.25	968.0	-7.14	5.25	968.0	-7.14	5.25	968.0
MAY 18 JUL 27	-6.98	6.48	976.0	-6.98	6.00	971.9	-6.98	5.56	964.2	-6.98	5.14	953.4	-6.98	5.14	953.4	-6.98	5.14	953.4	-6.98	5.14	953.4	-6.98	5.14	953.4	-6.98	5.14	953.4	-6.98	5.14	953.4	-6.98	5.14	953.4	-6.98	5.14	953.4
MAY 3 AUG 10	-6.78	6.29	940.0	-6.78	5.83	940.2	-6.78	5.41	936.8	-6.78	5.02	930.0	-6.78	5.02	930.0	-6.78	5.02	930.0	-6.78	5.02	930.0	-6.78	5.02	930.0	-6.78	5.02	930.0	-6.78	5.02	930.0	-6.78	5.02	930.0	-6.78	5.02	930.0
APR 19 AUG 25	-6.54	6.07	891.2	-6.54	5.63	896.5	-6.54	5.23	898.0	-6.54	4.86	896.0	-6.54	4.86	896.0	-6.54	4.86	896.0	-6.54	4.86	896.0	-6.54	4.86	896.0	-6.54	4.86	896.0	-6.54	4.86	896.0	-6.54	4.86	896.0	-6.54	4.86	896.0
APR 4 SEP 9	-6.27	5.83	831.2	-6.27	5.41	841.9	-6.27	5.03	848.6	-6.27	4.69	851.5	-6.27	4.69	851.5	-6.27	4.69	851.5	-6.27	4.69	851.5	-6.27	4.69	851.5	-6.27	4.69	851.5	-6.27	4.69	851.5	-6.27	4.69	851.5	-6.27	4.69	851.5
MAR 21 SEP 23	-6.00	5.58	761.1	-6.00	5.19	776.9	-6.00	4.83	788.7	-6.00	4.51	796.6	-6.00	4.51	796.6	-6.00	4.51	796.6	-6.00	4.51	796.6	-6.00	4.51	796.6	-6.00	4.51	796.6	-6.00	4.51	796.6	-6.00	4.51	796.6	-6.00	4.51	796.6
MAR 7 OCT 8	-5.73	5.33	686.0	-5.73	4.96	706.3	-5.73	4.63	722.7	-5.73	4.33	734.9	-5.73	4.33	734.9	-5.73	4.33	734.9	-5.73	4.33	734.9	-5.73	4.33	734.9	-5.73	4.33	734.9	-5.73	4.33	734.9	-5.73	4.33	734.9	-5.73	4.33	734.9
FEB 20 OCT 22	-5.46	5.09	611.4	-5.46	4.74	635.3	-5.46	4.43	655.4	-5.46	4.16	671.3	-5.46	4.16	671.3	-5.46	4.16	671.3	-5.46	4.16	671.3	-5.46	4.16	671.3	-5.46	4.16	671.3	-5.46	4.16	671.3	-5.46	4.16	671.3	-5.46	4.16	671.3
FEB 7 NOV 5	-5.22	4.86	542.6	-5.22	4.54	569.1	-5.22	4.25	591.9	-5.22	4.00	610.5	-5.22	4.00	610.5	-5.22	4.00	610.5	-5.22	4.00	610.5	-5.22	4.00	610.5	-5.22	4.00	610.5	-5.22	4.00	610.5	-5.22	4.00	610.5	-5.22	4.00	610.5
JAN 23 NOV 19	-5.02	4.68	485.9	-5.02	4.37	514.1	-5.02	4.10	538.7	-5.02	3.87	559.2	-5.02	3.87	559.2	-5.02	3.87	559.2	-5.02	3.87	559.2	-5.02	3.87	559.2	-5.02	3.87	559.2	-5.02	3.87	559.2	-5.02	3.87	559.2	-5.02	3.87	559.2
JAN 10 DEC 3	-4.86	4.54	445.5	-4.86	4.25	474.7	-4.86	3.99	500.3	-4.86	3.77	522.0	-4.86	3.77	522.0	-4.86	3.77	522.0	-4.86	3.77	522.0	-4.86	3.77	522.0	-4.86	3.77	522.0	-4.86	3.77	522.0	-4.86	3.77	522.0	-4.86	3.77	522.0
DEC 22	-4.77	4.46	421.8	-4.77	4.17	451.4	-4.77	3.93	477.6	-4.77	3.71	499.7	-4.77	3.71	499.7	-4.77	3.71	499.7	-4.77	3.71	499.7	-4.77	3.71	499.7	-4.77	3.71	499.7	-4.77	3.71	499.7	-4.77	3.71	499.7	-4.77	3.71	499.7
JUN 22	-7.23	6.58	939.3	-7.23	6.08	919.7	-7.23	5.65	900.0	-7.23	5.33	880.7	-7.23	5.33	880.7	-7.23	5.33	880.7	-7.23	5.33	880.7	-7.23	5.33	880.7	-7.23	5.33	880.7	-7.23	5.33	880.7	-7.23	5.33	880.7	-7.23	5.33	880.7
JUN 1 JUL 12	-7.14	6.54	934.6	-7.14	6.04	915.0	-7.14	5.61	895.3	-7.14	5.29	876.0	-7.14	5.29	876.0	-7.14	5.29	876.0	-7.14	5.29	876.0	-7.14	5.29	876.0	-7.14	5.29	876.0	-7.14	5.29	876.0	-7.14	5.29	876.0	-7.14	5.29	876.0
MAY 18 JUL 27	-6.98	6.47	925.1	-6.98	5.97	905.5	-6.98	5.54	885.8	-6.98	5.22	866.5	-6.98	5.22	866.5	-6.98	5.22	866.5	-6.98	5.22	866.5	-6.98	5.22	866.5	-6.98	5.22	866.5	-6.98	5.22	866.5	-6.98	5.22	866.5	-6.98	5.22	866.5
MAY 3 AUG 10	-6.78	6.36	908.7	-6.78	5.86	889.1	-6.78	5.43	869.4	-6.78	5.11	850.1	-6.78	5.11	850.1	-6.78	5.11	850.1	-6.78	5.11	850.1	-6.78	5.11	850.1	-6.78	5.11	850.1	-6.78	5.11	850.1	-6.78	5.11	850.1	-6.78	5.11	850.1
APR 19 AUG 25	-6.54	6.24	883.1	-6.54	5.74	863.5	-6.54	5.31	843.8	-6.54	4.99	824.5	-6.54	4.99	824.5	-6.54	4.99	824.5	-6.54	4.99	824.5	-6.54	4.99	824.5	-6.54	4.99	824.5	-6.54	4.99	824.5	-6.54	4.99	824.5	-6.54	4.99	824.5
APR 4 SEP 9	-6.27	6.11	847.6	-6.27	5.61	828.0	-6.27	5.18	808.3	-6.27	4.86	789.0	-6.27	4.86	789.0	-6.27	4.86	789.0	-6.27	4.86	789.0	-6.27	4.86	789.0	-6.27	4.86	789.0	-6.27	4.86	789.0	-6.27	4.86	789.0	-6.27	4.86	789.0
MAR 21 SEP 23	-6.00	5.97	801.6	-6.00	5.47	782.0	-6.00	5.04	762.3	-6.00	4.72	743.0	-6.00	4.72	743.0	-6.00	4.72	743.0	-6.00	4.72	743.0	-6.00	4.72	743.0	-6.00	4.72	743.0	-6.00	4.72	743.0	-6.00	4.72	743.0	-6.00	4.72	743.0
MAR 7 OCT 8	-5.73	5.83	748.2	-5.73	5.33	728.6	-5.73	4.90	708.9	-5.73	4.58	689.6	-5.73	4.58	689.6	-5.73	4.58	689.6	-5.73	4.58	689.6	-5.73	4.58	689.6	-5.73	4.58	689.6	-5.73	4.58	689.6	-5.73	4.58	689.6	-5.73	4.58	689.6
FEB 20 OCT 22	-5.46	5.70	691.4	-5.46	5.20	671.8	-5.46	4.77	652.1	-5.46	4.45	632.8	-5.46	4.45	632.8	-5.46	4.45	632.8	-5.46	4.45	632.8	-5.46	4.45	632.8	-5.46	4.45	632.8	-5.46	4.45	632.8	-5.46	4.45	632.8	-5.46	4.45	632.8
FEB 7 NOV 5	-5.22	5.58	636.0	-5.22	5.08	616.4	-5.22	4.65	596.7	-5.22	4.33	577.4	-5.22	4.33	577.4	-5.22	4.33	577.4	-5.22	4.33	577.4	-5.22	4.33	577.4	-5.22	4.33	577.4	-5.22	4.33	577.4	-5.22	4.33	577.4	-5.22	4.33	577.4
JAN 23 NOV 19	-5.02	5.48	588.4	-5.02	4.98	568.8	-5.02	4.55	549.1	-5.02	4.23	529.8	-5.02	4.23	529.8	-5.02	4.23	529.8	-5.02	4.23	529.8	-5.02	4.23	529.8	-5.02	4.23	529.8	-5.02	4.23	529.8	-5.02	4.23	529.8	-5.02	4.23	529.8
JAN 10 DEC 3	-4.86	5.40	553.4	-4.86	4.90	533.8	-4.86	4.47	514.1	-4.86	4.15	494.8	-4.86	4.15	494.8	-4.86	4.15	494.8	-4.86	4.15	494.8	-4.86	4.15	494.8	-4.86	4.15	494.8	-4.86	4.15	494.8	-4.86	4.15	494.8	-4.86	4.15	494.8
DEC 22	-4.77	5.36	532.4	-4.77	4.86	512.8	-4.77	4.43	493.1	-4.77	4.11	473.8	-4.77	4.11	473.8	-4.77	4.11	473.8	-4.77	4.11	473.8	-4.77	4.11	473.8	-4.77	4.11	473.8	-4.77	4.11	473.8	-4.77	4.11	473.8	-4.77	4.11	473.8

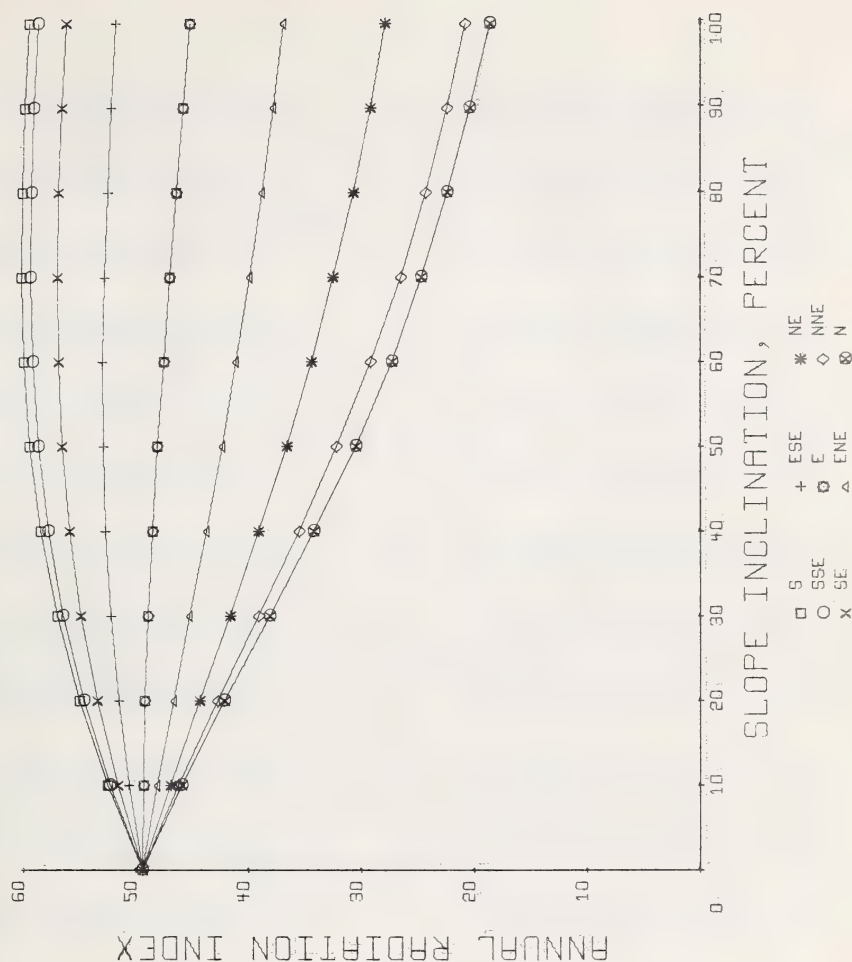
NOTE - FOR ASPECTS WITH WEST COMPONENTS, THE TIME AND SIGN OF SR AND SS ARE REVERSED.

LATITUDE 36 N
ASPECT E - W

	SLOPE										SLOPE										SLOPE									
	10 PCT					20 PCT					30 PCT					40 PCT					50 PCT									
	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY					
JUN 22	-7.23	6.75	1015.7	-7.23	6.26	1008.3	-7.23	5.79	996.9	-7.23	5.34	982.6	-7.23	4.85	968.2	-7.23	4.36	953.9	-7.23	3.87	939.6	-7.23	3.38	925.3	-7.23	2.89	911.0			
JUN 12	-7.14	6.66	1000.7	-7.14	6.18	993.6	-7.14	5.71	982.7	-7.14	5.26	969.0	-7.14	4.77	954.7	-7.14	4.28	940.4	-7.14	3.79	926.1	-7.14	3.30	911.8	-7.14	2.81	897.5			
JUN 18	-6.98	6.51	974.0	-6.98	6.03	967.4	-6.98	5.57	957.4	-6.98	5.13	944.8	-6.98	4.68	931.2	-6.98	4.23	917.6	-6.98	3.78	904.0	-6.98	3.33	890.4	-6.98	2.88	876.8			
MAY 3	-6.78	6.30	934.0	-6.78	5.83	928.2	-6.78	5.37	919.4	-6.78	4.94	908.2	-6.78	4.51	896.9	-6.78	4.08	885.6	-6.78	3.65	874.3	-6.78	3.22	863.0	-6.78	2.79	851.7			
MAY 10	-6.54	6.06	880.5	-6.54	5.59	875.8	-6.54	5.15	868.4	-6.54	4.73	858.9	-6.54	4.31	850.2	-6.54	3.89	841.5	-6.54	3.47	832.8	-6.54	3.05	824.1	-6.54	2.63	815.4			
APR 19	-6.27	5.80	815.7	-6.27	5.34	812.1	-6.27	4.90	806.2	-6.27	4.49	798.7	-6.27	4.07	790.2	-6.27	3.66	781.7	-6.27	3.24	773.2	-6.27	2.83	764.7	-6.27	2.41	756.2			
APR 4	-6.00	5.53	741.1	-6.00	5.07	738.5	-6.00	4.64	734.3	-6.00	4.25	728.7	-6.00	3.86	723.1	-6.00	3.47	717.5	-6.00	3.08	711.9	-6.00	2.69	706.3	-6.00	2.30	700.7			
MAR 21	-5.73	5.26	662.0	-5.73	4.81	660.5	-5.73	4.39	657.8	-5.73	3.97	654.1	-5.73	3.56	650.4	-5.73	3.15	646.7	-5.73	2.74	642.9	-5.73	2.33	639.2	-5.73	1.92	635.4			
MAR 7	-5.46	5.00	584.3	-5.46	4.55	583.6	-5.46	4.14	582.4	-5.46	3.73	581.2	-5.46	3.32	579.9	-5.46	2.91	578.7	-5.46	2.50	577.4	-5.46	2.09	576.2	-5.46	1.68	574.9			
FEB 20	-5.22	4.76	513.2	-5.22	4.32	513.3	-5.22	3.91	513.5	-5.22	3.50	513.6	-5.22	3.09	513.7	-5.22	2.68	513.8	-5.22	2.27	513.9	-5.22	1.86	514.0	-5.22	1.45	514.1			
FEB 7	-5.02	4.55	455.1	-5.02	4.12	455.8	-5.02	3.72	456.5	-5.02	3.32	457.2	-5.02	2.92	457.9	-5.02	2.52	458.6	-5.02	2.12	459.3	-5.02	1.72	460.0	-5.02	1.32	460.7			
JAN 23	-4.86	4.40	414.1	-4.86	3.97	415.1	-4.86	3.58	416.3	-4.86	3.19	417.4	-4.86	2.80	418.5	-4.86	2.41	419.6	-4.86	2.02	420.7	-4.86	1.63	421.8	-4.86	1.24	422.9			
JAN 10	-4.77	4.31	390.0	-4.77	3.88	391.2	-4.77	3.49	392.7	-4.77	3.10	394.0	-4.77	2.71	395.3	-4.77	2.32	396.6	-4.77	1.93	397.9	-4.77	1.54	399.2	-4.77	1.15	400.5			
DEC 22	-4.50	4.04	325.5	-4.50	3.61	326.7	-4.50	3.22	328.0	-4.50	2.83	329.3	-4.50	2.44	330.6	-4.50	2.05	331.9	-4.50	1.66	333.2	-4.50	1.27	334.5	-4.50	0.88	335.8			
DEC 9	-4.23	3.77	260.0	-4.23	3.34	261.2	-4.23	2.95	262.4	-4.23	2.5	263.7	-4.23	2.11	264.9	-4.23	1.72	266.2	-4.23	1.33	267.5	-4.23	0.94	268.8	-4.23	0.55	270.1			
NOV 26	-3.96	3.50	195.0	-3.96	3.07	196.2	-3.96	2.68	197.5	-3.96	2.29	198.8	-3.96	1.90	200.1	-3.96	1.51	201.4	-3.96	1.12	202.7	-3.96	0.73	204.0	-3.96	0.34	205.3			
NOV 19	-3.69	3.23	120.0	-3.69	2.80	121.2	-3.69	2.41	122.5	-3.69	2.02	123.8	-3.69	1.63	125.1	-3.69	1.24	126.4	-3.69	0.85	127.7	-3.69	0.46	129.0	-3.69	0.07	130.3			
NOV 12	-3.42	2.96	50.0	-3.42	2.53	51.2	-3.42	2.14	52.5	-3.42	1.75	53.8	-3.42	1.36	55.1	-3.42	0.97	56.4	-3.42	0.58	57.7	-3.42	0.19	59.0	-3.42	-0.20	60.3			
NOV 5	-3.15	2.69	-20.0	-3.15	2.26	-19.2	-3.15	1.87	-18.5	-3.15	1.48	-17.8	-3.15	1.09	-17.1	-3.15	0.70	-16.4	-3.15	0.31	-15.7	-3.15	-0.08	-15.0	-3.15	-0.47	-14.3			
OCT 22	-2.88	2.42	-90.0	-2.88	2.00	-91.2	-2.88	1.61	-92.5	-2.88	1.22	-93.8	-2.88	0.83	-95.1	-2.88	0.44	-96.4	-2.88	0.05	-97.7	-2.88	-0.34	-99.0	-2.88	-0.73	-100.3			
OCT 15	-2.61	2.15	-160.0	-2.61	1.73	-161.2	-2.61	1.34	-162.5	-2.61	0.95	-163.8	-2.61	0.56	-165.1	-2.61	0.17	-166.4	-2.61	-0.22	-167.7	-2.61	-0.61	-169.0	-2.61	-1.00	-170.3			
OCT 8	-2.34	1.88	-230.0	-2.34	1.41	-231.2	-2.34	1.02	-232.5	-2.34	0.63	-233.8	-2.34	0.24	-235.1	-2.34	-0.15	-236.4	-2.34	-0.54	-237.7	-2.34	-0.93	-239.0	-2.34	-1.32	-240.3			
SEP 23	-2.07	1.61	-300.0	-2.07	1.14	-301.2	-2.07	0.75	-302.5	-2.07	0.36	-303.8	-2.07	-0.03	-305.1	-2.07	-0.42	-306.4	-2.07	-0.81	-307.7	-2.07	-1.20	-309.0	-2.07	-1.59	-310.3			
SEP 16	-1.80	1.34	-370.0	-1.80	0.87	-371.2	-1.80	0.48	-372.5	-1.80	0.09	-373.8	-1.80	-0.30	-375.1	-1.80	-0.69	-376.4	-1.80	-1.08	-377.7	-1.80	-1.47	-379.0	-1.80	-1.86	-380.3			
SEP 9	-1.53	1.07	-440.0	-1.53	0.40	-441.2	-1.53	0.01	-442.5	-1.53	-0.38	-443.8	-1.53	-0.77	-445.1	-1.53	-1.16	-446.4	-1.53	-1.55	-447.7	-1.53	-1.94	-449.0	-1.53	-2.33	-450.3			
AUG 25	-1.26	0.80	-510.0	-1.26	-0.07	-511.2	-1.26	-0.46	-512.5	-1.26	-0.85	-513.8	-1.26	-1.24	-515.1	-1.26	-1.63	-516.4	-1.26	-2.02	-517.7	-1.26	-2.41	-519.0	-1.26	-2.80	-520.3			
AUG 18	-0.99	0.53	-580.0	-0.99	-0.54	-581.2	-0.99	-0.93	-582.5	-0.99	-1.32	-583.8	-0.99	-1.71	-585.1	-0.99	-2.10	-586.4	-0.99	-2.49	-587.7	-0.99	-2.88	-589.0	-0.99	-3.27	-590.3			
AUG 11	-0.72	0.26	-650.0	-0.72	-1.07	-651.2	-0.72	-1.46	-652.5	-0.72	-1.85	-653.8	-0.72	-2.24	-655.1	-0.72	-2.63	-656.4	-0.72	-3.02	-657.7	-0.72	-3.41	-659.0	-0.72	-3.80	-660.3			
AUG 4	-0.45	-0.01	-720.0	-0.45	-1.54	-721.2	-0.45	-1.93	-722.5	-0.45	-2.32	-723.8	-0.45	-2.71	-725.1	-0.45	-3.10	-726.4	-0.45	-3.49	-727.7	-0.45	-3.88	-729.0	-0.45	-4.27	-730.3			
JUL 27	-0.18	-0.28	-790.0	-0.18	-2.01	-791.2	-0.18	-2.40	-792.5	-0.18	-2.79	-793.8	-0.18	-3.18	-795.1	-0.18	-3.57	-796.4	-0.18	-3.96	-797.7	-0.18	-4.35	-799.0	-0.18	-4.74	-800.3			
JUL 20	0.09	-0.55	-860.0	0.09	-2.48	-861.2	0.09	-2.87	-862.5	0.09	-3.26	-863.8	0.09	-3.65	-865.1	0.09	-4.04	-866.4	0.09	-4.43	-867.7	0.09	-4.82	-869.0	0.09	-5.21	-870.3			
JUL 13	0.36	-0.82	-930.0	0.36	-2.95	-931.2	0.36	-3.34	-932.5	0.36	-3.73	-933.8	0.36	-4.12	-935.1	0.36	-4.51	-936.4	0.36	-4.90	-937.7	0.36	-5.29	-939.0	0.36	-5.68	-940.3			
JUL 6	0.63	-1.09	-1000.0	0.63	-3.42	-1001.2	0.63	-3.81	-1002.5	0.63	-4.20	-1003.8	0.63	-4.59	-1005.1	0.63	-4.98	-1006.4	0.63	-5.37	-1007.7	0.63	-5.76	-1009.0	0.63	-6.15	-1010.3			
JUN 29	0.90	-1.36	-1070.0	0.90	-3.89	-1071.2	0.90	-4.28	-1072.5	0.90	-4.67	-1073.8	0.90	-5.06	-1075.1	0.90	-5.45	-1076.4	0.90	-5.84	-1077.7	0.90	-6.23	-1079.0	0.90	-6.62	-1080.3			
JUN 22	1.17	-1.63	-1140.0	1.17	-4.36	-1141.2	1.17	-4.75	-1142.5	1.17	-5.14	-1143.8	1.17	-5.53	-1145.1	1.17	-5.92	-1146.4	1.17	-6.31	-1147.7	1.17	-6.70	-1149.0	1.17	-7.09	-1150.3			
JUN 15	1.44	-1.90	-1210.0	1.44	-4.83	-1211.2	1.44	-5.22	-1212.5	1.44	-5.61	-1213.8	1.44	-6.00	-1215.1	1.44	-6.39	-1216.4	1.44	-6.78	-1217.7	1.44	-7.17	-1219.0	1.44	-7.56	-1220.3			
JUN 8	1.71	-2.17	-1280.0	1.71	-5.30	-1281.2	1.71	-5.69	-1282.5	1.71	-6.08	-1283.8	1.71	-6.47	-1285.1	1.71	-6.86	-1286.4	1.71	-7.25	-1287.7	1.71	-7.64	-1289.0	1.71	-8.03	-1290.3			
JUN 1	1.98	-2.44	-1350.0	1.98	-5.77	-1351.2	1.98	-6.16	-1352.5	1.98	-6.55	-1353.8	1.98	-6.94	-1355.1	1.98	-7.33	-1356.4	1.98	-7.72	-1357.7	1.98	-8.11	-1359.0	1.98	-8.50	-1360.3			
MAY 25	2.25	-2.71	-1420.0	2.25	-6.24	-1421.2	2.25	-6.63	-1422.5	2.25	-7.02	-1423.8	2.25	-7.41	-1425.1	2.25	-7.80	-1426.4	2.25	-8.19	-1427.7	2.25	-8.58	-1429.0	2.25	-8.97	-1430.3			
MAY 18	2.52	-2.98	-1490.0	2.52	-6.71	-1491.2	2.52	-7.10	-1492.5	2.52	-7.49	-1493.8	2.52	-7.88	-1495.1	2.52	-8.27	-1496.4	2.52	-8.66	-1497.7	2.52	-9.05	-1499.0	2.52	-9.44	-1500.3			
MAY 11	2.79	-3.25	-1560.0	2.79	-7.18	-1561.2	2.79	-7.57	-1562.5	2.79	-7.96	-1563.8	2.79	-8.35	-1565.1	2.79	-8.74	-1566.4	2.79	-9.13	-1567.7	2.79	-9.52	-1569.0	2.79	-9.91	-1570.3			
MAY 4	3.06	-3.52	-1630.0	3.06	-7.65	-1631.2	3.06	-8.04	-1632.5	3.06	-8.43	-1633.8	3.06	-8.82	-1635.1	3.06	-9.21	-1636.4	3.06	-9.60	-1637.7	3.06	-9.99	-1639.0	3.06	-10.38	-1640.3			
APR 27	3.33	-3.79	-1700.0	3.33	-8.12	-1701.2	3.33	-8.51	-1702.5	3.33	-8.90	-1703.8	3.33	-9.29	-1705.1	3.33	-9.68	-1706.4	3.33	-10.07	-1707.7	3.33	-10.46	-1709.0	3.33	-10.85	-1710.3			
APR 20	3.60	-4.06	-1770.0	3.60	-8.59	-1771.2	3.60	-8.98	-1772.5	3.60	-9.37	-1773.8	3.60	-9.76	-1775.1	3.60	-10.15	-1776.4	3.60	-10.54	-1777.7	3.60	-10.93	-1779.0	3.60	-11.32	-1780.3			
APR 13	3.87	-4.33	-1840.0	3.87	-9.06	-1841.2	3.87	-9.45	-1842.5	3.87	-9.84	-1843.8	3.87	-10.23	-1845.1	3.87	-10.62	-1846.4	3.87	-11.01	-1847.7	3.87	-11.40	-1849.0	3.87	-11.79	-1850.3			
APR 6	4.14	-4.60	-1910.0	4.14	-9.53	-1911.2	4.14	-																						

NOTE - FOR ASPECTS WITH WEST COMPONENTS, THE TIME AND SIGN OF SR AND SS ARE REVERSED.

RADIATION INDEXES FOR VARIOUS FACETS AT LATITUDE 38° N



HORIZONTAL SURFACE

LATITUDE 38° N

	SR	SS	LY
JUN 22	-7.32	7.32	1020.9
JUN 1 JUL 12	-7.22	7.22	1004.1
MAY 18 JUL 27	-7.06	7.06	974.3
MAY 3 AUG 10	-6.84	6.84	930.2
APR 19 AUG 25	-6.58	6.58	872.0
APR 4 SEP 9	-6.29	6.29	802.1
MAR 21 SEP 23	-6.00	6.00	722.7
MAR 7 OCT 8	-5.71	5.71	639.4
FEB 20 OCT 22	-5.42	5.42	558.4
FEB 7 NOV 5	-5.16	5.16	485.0
JAN 23 NOV 19	-4.94	4.94	425.5
JAN 10 DEC 3	-4.78	4.78	383.6
DEC 22	-4.68	4.68	359.2

YEAR R.I.
259.861 .4944

LATITUDE 38 N
ASPECT N -

	10 PCT				20 PCT				SLOPE				30 PCT				40 PCT				50 PCT			
	THETA		ALPHA		THETA		ALPHA		THETA		ALPHA		THETA		ALPHA		THETA		ALPHA		THETA		ALPHA	
	SR	SS	LY		SR	SS	LY		SR	SS	LY		SR	SS	LY		SR	SS	LY		SR	SS	LY	
JUN 22	-7.32	7.32	1022.2		-7.32	7.32	1013.5		-7.32	7.32	996.1		-7.32	7.32	971.5		-7.32	7.32	941.5		-7.32	7.32	904.5	
JUN 1 JUL 12	-7.22	7.22	1000.5		-7.22	7.22	981.3		-7.22	7.22	965.8		-7.22	7.22	937.5		-7.22	7.22	904.3		-7.22	7.22	871.5	
MAY 18 JUL 27	-7.06	7.06	962.7		-7.06	7.06	942.0		-7.06	7.06	913.7		-7.06	7.06	879.3		-7.06	7.06	841.0		-7.06	7.06	804.0	
MAY 3 AUG 10	-6.84	6.84	907.7		-6.84	6.84	877.0		-6.84	6.84	839.5		-6.84	6.84	797.1		-6.84	6.84	751.9		-6.84	6.84	704.0	
APR 19 AUG 25	-6.58	6.58	837.0		-6.58	6.58	794.7		-6.58	6.58	746.8		-6.58	6.58	695.4		-6.58	6.58	642.3		-6.58	6.58	594.0	
APR 4 SEP 9	-6.29	6.29	754.3		-6.29	6.29	700.2		-6.29	6.29	641.9		-6.29	6.29	581.4		-6.29	6.29	520.7		-6.29	6.29	471.0	
MAR 21 SEP 23	-6.00	6.00	662.8		-6.00	6.00	597.8		-6.00	6.00	530.0		-6.00	6.00	461.3		-6.00	6.00	393.9		-6.00	6.00	324.0	
MAR 7 OCT 8	-5.64	5.64	569.4		-5.56	5.56	495.6		-5.47	5.47	420.5		-5.35	5.35	346.3		-5.20	5.20	274.9		-5.00	5.00	204.0	
FEB 20 OCT 22	-5.29	5.29	480.9		-5.14	5.14	401.2		-4.95	4.95	322.2		-4.71	4.71	246.1		-4.40	4.40	175.4		-4.00	4.00	104.0	
FEB 7 NOV 5	-4.97	4.97	402.6		-4.74	4.74	319.9		-4.45	4.45	240.0		-4.09	4.09	165.5		-3.61	3.61	95.4		-3.00	3.00	24.0	
JAN 23 NOV 19	-4.69	4.69	340.5		-4.39	4.39	257.0		-4.02	4.02	178.4		-3.53	3.53	107.8		-2.85	2.85	45.0		-2.00	2.00	0.0	
JAN 10 DEC 3	-4.49	4.49	297.6		-4.13	4.13	214.5		-3.68	3.68	138.0		-3.08	3.08	50.0		-2.13	2.13	21.2		-1.00	1.00	0.0	
DEC 22	-4.36	4.36	273.0		-3.97	3.97	190.5		-3.47	3.47	115.8		-2.78	2.78	53.1		-1.59	1.59	8.9		-0.00	0.00	0.0	
JUN 22	-7.32	7.32	908.1		-7.32	7.32	872.7		-7.32	7.32	836.8		-7.32	7.32	801.4		-7.32	7.32	766.8		-7.32	7.32	731.8	
JUN 1 JUL 12	-7.22	7.22	868.2		-7.22	7.22	830.5		-7.22	7.22	792.7		-7.22	7.22	755.7		-7.22	7.22	719.8		-7.22	7.22	684.0	
MAY 18 JUL 27	-7.06	7.06	800.4		-7.06	7.06	759.0		-7.06	7.06	718.1		-7.06	7.06	678.7		-7.06	7.06	640.7		-7.06	7.06	604.0	
MAY 3 AUG 10	-6.84	6.84	705.4		-6.84	6.84	659.2		-6.84	6.84	614.4		-6.84	6.84	571.6		-6.84	6.84	531.0		-6.84	6.84	494.0	
APR 19 AUG 25	-6.58	6.58	589.4		-6.58	6.58	537.9		-6.58	6.58	488.7		-6.58	6.58	442.5		-6.58	6.58	399.1		-6.58	6.58	362.0	
APR 4 SEP 9	-6.29	6.29	461.5		-6.29	6.29	404.8		-6.29	6.29	351.5		-6.29	6.29	302.0		-6.29	6.29	256.1		-6.29	6.29	219.0	
MAR 21 SEP 23	-6.00	6.00	329.2		-6.00	6.00	268.1		-6.00	6.00	211.5		-6.00	6.00	159.5		-6.00	6.00	111.7		-6.00	6.00	64.0	
MAR 7 OCT 8	-5.01	5.01	208.1		-4.75	4.75	146.8		-4.36	4.36	92.1		-3.74	3.74	45.3		-2.44	2.44	9.3		-0.00	0.00	0.0	
FEB 20 OCT 22	-3.99	3.99	111.9		-3.39	3.39	57.7		-2.37	2.37	16.1		0.00	0.00	0.0		0.00	0.00	0.0		0.00	0.00	0.0	
FEB 7 NOV 5	-2.90	2.90	44.6		-1.61	1.61	6.5		0.00	0.00	0.0		0.00	0.00	0.0		0.00	0.00	0.0		0.00	0.00	0.0	
JAN 23 NOV 19	-1.61	1.61	7.8		0.00	0.00	0.0		0.00	0.00	0.0		0.00	0.00	0.0		0.00	0.00	0.0		0.00	0.00	0.0	
JAN 10 DEC 3	0.00	0.00	0.0		0.00	0.00	0.0		0.00	0.00	0.0		0.00	0.00	0.0		0.00	0.00	0.0		0.00	0.00	0.0	
DEC 22	0.00	0.00	0.0		0.00	0.00	0.0		0.00	0.00	0.0		0.00	0.00	0.0		0.00	0.00	0.0		0.00	0.00	0.0	
JUN 22	-7.32	7.32	908.1		-7.32	7.32	872.7		-7.32	7.32	836.8		-7.32	7.32	801.4		-7.32	7.32	766.8		-7.32	7.32	731.8	
JUN 1 JUL 12	-7.22	7.22	868.2		-7.22	7.22	830.5		-7.22	7.22	792.7		-7.22	7.22	755.7		-7.22	7.22	719.8		-7.22	7.22	684.0	
MAY 18 JUL 27	-7.06	7.06	800.4		-7.06	7.06	759.0		-7.06	7.06	718.1		-7.06	7.06	678.7		-7.06	7.06	640.7		-7.06	7.06	604.0	
MAY 3 AUG 10	-6.84	6.84	705.4		-6.84	6.84	659.2		-6.84	6.84	614.4		-6.84	6.84	571.6		-6.84	6.84	531.0		-6.84	6.84	494.0	
APR 19 AUG 25	-6.58	6.58	589.4		-6.58	6.58	537.9		-6.58	6.58	488.7		-6.58	6.58	442.5		-6.58	6.58	399.1		-6.58	6.58	362.0	
APR 4 SEP 9	-6.29	6.29	461.5		-6.29	6.29	404.8		-6.29	6.29	351.5		-6.29	6.29	302.0		-6.29	6.29	256.1		-6.29	6.29	219.0	
MAR 21 SEP 23	-6.00	6.00	329.2		-6.00	6.00	268.1		-6.00	6.00	211.5		-6.00	6.00	159.5		-6.00	6.00	111.7		-6.00	6.00	64.0	
MAR 7 OCT 8	-5.01	5.01	208.1		-4.75	4.75	146.8		-4.36	4.36	92.1		-3.74	3.74	45.3		-2.44	2.44	9.3		-0.00	0.00	0.0	
FEB 20 OCT 22	-3.99	3.99	111.9		-3.39	3.39	57.7		-2.37	2.37	16.1		0.00	0.00	0.0		0.00	0.00	0.0		0.00	0.00	0.0	
FEB 7 NOV 5	-2.90	2.90	44.6		-1.61	1.61	6.5		0.00	0.00	0.0		0.00	0.00	0.0		0.00	0.00	0.0		0.00	0.00	0.0	
JAN 23 NOV 19	-1.61	1.61	7.8		0.00	0.00	0.0		0.00	0.00	0.0		0.00	0.00	0.0		0.00	0.00	0.0		0.00	0.00	0.0	
JAN 10 DEC 3	0.00	0.00	0.0		0.00	0.00	0.0		0.00	0.00	0.0		0.00	0.00	0.0		0.00	0.00	0.0		0.00	0.00	0.0	
DEC 22	0.00	0.00	0.0		0.00	0.00	0.0		0.00	0.00	0.0		0.00	0.00	0.0		0.00	0.00	0.0		0.00	0.00	0.0	

NOTE - FOR ASPECTS WITH WEST COMPONENTS, THE TIME AND SIGN OF SR AND SS ARE REVERSED.

LATITUDE 38 N
ASPECT S -

	SLOPE																										
	10 PCT					20 PCT					30 PCT					40 PCT					50 PCT						
	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY		
JUN 22	-7.06	7.06	1011.1			-6.84	6.84	994.2			-6.65	6.65	971.1			-6.48	6.48	942.9			-6.34	6.34	911.0				
JUN 1 JUL 12	-6.98	6.98	999.1			-6.78	6.78	986.7			-6.60	6.60	967.7			-6.45	6.45	943.2			-6.31	6.31	914.6				
MAY 18 JUL 27	-6.85	6.85	977.3			-6.68	6.68	972.5			-6.52	6.52	960.5			-6.39	6.39	942.3			-6.27	6.27	919.4				
MAY 3 AUG 10	-6.68	6.68	944.1			-6.54	6.54	949.7			-6.42	6.42	947.4			-6.31	6.31	938.1			-6.22	6.22	923.3				
APR 19 AUG 25	-6.47	6.47	898.6			-6.37	6.37	916.5			-6.29	6.29	925.9			-6.21	6.21	927.7			-6.15	6.15	922.9				
APR 4 SEP 9	-6.24	6.24	842.1			-6.19	6.19	873.2			-6.15	6.15	895.3			-6.11	6.11	909.2			-6.08	6.08	915.6				
MAR 21 SEP 23	-6.00	6.00	775.3			-6.00	6.00	819.4			-6.00	6.00	854.5			-6.00	6.00	880.7			-6.00	6.00	898.9				
MAR 7 OCT 8	-5.71	5.71	703.1			-5.71	5.71	758.8			-5.71	5.71	805.5			-5.71	5.71	843.1			-5.71	5.71	872.3				
FEB 20 OCT 22	-5.42	5.42	630.7			-5.42	5.42	695.5			-5.42	5.42	751.6			-5.42	5.42	798.5			-5.42	5.42	836.7				
FEB 7 NOV 5	-5.16	5.16	563.3			-5.16	5.16	634.6			-5.16	5.16	697.5			-5.16	5.16	751.4			-5.16	5.16	796.4				
JAN 23 NOV 19	-4.94	4.94	507.5			-4.94	4.94	582.9			-4.94	4.94	650.2			-4.94	4.94	708.6			-4.94	4.94	758.2				
JAN 10 DEC 3	-4.78	4.78	467.5			-4.78	4.78	545.1			-4.78	4.78	614.8			-4.78	4.78	675.9			-4.78	4.78	728.2				
DEC 22	-4.68	4.68	443.8			-4.68	4.68	522.5			-4.68	4.68	593.4			-4.68	4.68	655.7			-4.68	4.68	709.3				
	YEAR	R.I.	YEAR	R.I.	YEAR	YEAR	R.I.	YEAR	R.I.	YEAR	YEAR	R.I.	YEAR	R.I.	YEAR	YEAR	R.I.	YEAR	R.I.	YEAR	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	
	276.068	.5252	289.517	.5508	300.026	.5708	307.686	.5854	312.761	.5951																	
	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	
	7.0	0.0	3.0	0.0	0.0	0.0	-0.7	0.0	-0.7	0.0	-4.0	0.0	-4.0	0.0	-4.0	0.0	-4.0	0.0	-7.0	0.0	-7.0	0.0	-7.0	0.0	-7.0	0.0	
	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY
JUN 22	-6.21	6.21	877.0			-6.09	6.09	842.1			-5.98	5.98	807.4			-5.88	5.88	773.7			-5.80	5.80	741.2				
JUN 1 JUL 12	-6.19	6.19	883.5			-6.08	6.08	851.1			-5.98	5.98	818.6			-5.89	5.89	786.7			-5.81	5.81	755.9				
MAY 18 JUL 27	-6.17	6.17	893.3			-6.07	6.07	865.3			-5.98	5.98	836.6			-5.91	5.91	808.0			-5.84	5.84	780.0				
MAY 3 AUG 10	-6.13	6.13	904.5			-6.06	6.06	882.8			-5.99	5.99	859.6			-5.93	5.93	835.9			-5.87	5.87	812.0				
APR 19 AUG 25	-6.09	6.09	913.1			-6.04	6.04	895.5			-5.99	5.99	883.4			-5.95	5.95	865.9			-5.91	5.91	847.5				
APR 4 SEP 9	-6.05	6.05	916.0			-6.02	6.02	911.7			-6.00	6.00	903.9			-5.97	5.97	893.7			-5.95	5.95	881.8				
MAR 21 SEP 23	-6.00	6.00	910.2			-6.00	6.00	915.8			-6.00	6.00	917.0			-6.00	6.00	914.9			-6.00	6.00	910.3				
MAR 7 OCT 8	-5.71	5.71	893.9			-5.71	5.71	909.0			-5.71	5.71	918.9			-5.71	5.71	924.6			-5.71	5.71	927.0				
FEB 20 OCT 22	-5.42	5.42	866.8			-5.42	5.42	890.0			-5.42	5.42	907.1			-5.42	5.42	915.5			-5.42	5.42	928.1				
FEB 7 NOV 5	-5.16	5.16	833.0			-5.16	5.16	862.3			-5.16	5.16	885.2			-5.16	5.16	902.8			-5.16	5.16	916.2				
JAN 23 NOV 19	-4.94	4.94	799.3			-4.94	4.94	832.8			-4.94	4.94	859.8			-4.94	4.94	881.1			-4.94	4.94	897.9				
JAN 10 DEC 3	-4.78	4.78	771.9			-4.78	4.78	808.1			-4.78	4.78	837.4			-4.78	4.78	861.1			-4.78	4.78	880.0				
DEC 22	-4.68	4.68	754.4			-4.68	4.68	791.9			-4.68	4.68	822.5			-4.68	4.68	847.3			-4.68	4.68	867.5				

NOTE - FOR ASPECTS WITH WEST COMPONENTS, THE TIME AND SIGN OF SR AND SS ARE REVERSED.

LATITUDE 38 N
ASPECT NNE - NNW

SLOPE										SLOPE										SLOPE									
10 PCT					20 PCT					30 PCT					40 PCT					50 PCT					60 PCT				
THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY
43.2	3.0	-7.32	7.32	1021.7	-7.32	7.32	7.32	7.32	1012.6	-7.32	7.32	7.32	7.32	994.7	-7.32	7.32	7.32	7.32	969.7	-7.32	7.32	7.32	7.32	939.4	-7.32	7.32	7.32	7.32	909.8
JUN 22		-7.22	7.22	1000.4	-7.22	7.22	7.22	7.22	987.1	-7.22	7.22	7.22	7.22	965.5	-7.22	7.22	7.22	7.22	937.1	-7.22	7.22	7.22	7.22	903.8	-7.22	7.22	7.22	7.22	874.3
JUN 1 JUL 12		-7.06	7.06	963.2	-7.06	7.06	7.06	7.06	943.0	-7.06	7.06	7.06	7.06	915.1	-7.06	7.06	7.06	7.06	881.3	-7.06	7.06	7.06	7.06	848.3	-7.06	7.06	7.06	7.06	815.2
MAY 18 JUL 27		-6.84	6.81	909.1	-6.84	6.78	6.78	879.7	879.7	-6.84	6.75	6.75	843.5	843.5	-6.84	6.70	6.70	807.3	807.3	-6.84	6.64	6.64	770.2	770.2	-6.84	6.58	6.58	733.1	733.1
MAY 3 AUG 10		-6.58	6.50	839.4	-6.58	6.40	6.40	799.6	799.6	-6.58	6.29	6.29	754.3	754.3	-6.58	6.15	6.15	705.5	705.5	-6.58	6.00	6.00	668.4	668.4	-6.58	5.98	5.98	631.3	631.3
APR 19 AUG 25		-6.29	6.15	757.9	-6.29	5.99	5.99	707.7	707.7	-6.29	5.80	5.80	653.8	653.8	-6.29	5.67	5.67	600.0	600.0	-6.29	5.50	5.50	556.1	556.1	-6.29	5.30	5.30	512.2	512.2
APR 4 SEP 9		-6.00	5.80	667.6	-6.00	5.57	5.57	608.2	608.2	-6.00	5.30	5.30	547.0	547.0	-6.00	5.00	5.00	486.0	486.0	-6.00	4.61	4.61	427.5	427.5	-6.00	4.20	4.20	368.0	368.0
MAR 21 SEP 23		-5.71	5.45	575.2	-5.71	5.14	5.14	508.5	508.5	-5.71	4.80	4.80	442.0	442.0	-5.71	4.39	4.39	377.9	377.9	-5.71	3.92	3.92	318.4	318.4	-5.71	3.40	3.40	258.9	258.9
MAR 7 OCT 8		-5.42	5.10	487.4	-5.42	4.73	4.73	415.7	415.7	-5.42	4.31	4.31	346.2	346.2	-5.42	3.81	3.81	281.2	281.2	-5.42	3.24	3.24	222.9	222.9	-5.42	2.60	2.60	163.4	163.4
FEB 20 OCT 22		-5.16	4.79	409.5	-5.16	4.35	4.35	335.1	335.1	-5.16	3.85	3.85	264.7	264.7	-5.16	3.26	3.26	200.8	200.8	-5.16	2.58	2.58	145.5	145.5	-5.16	1.89	1.89	89.7	89.7
FEB 7 NOV 5		-4.92	4.52	347.6	-4.92	4.02	4.02	272.2	272.2	-4.92	3.45	3.45	202.5	202.5	-4.92	2.77	2.77	141.0	141.0	-4.92	2.08	2.08	96.1	96.1	-4.92	1.33	1.33	41.6	41.6
JAN 23 NOV 19		-4.71	4.31	304.7	-4.71	3.77	3.77	229.5	229.5	-4.71	3.14	3.14	161.3	161.3	-4.71	2.38	2.38	102.6	102.6	-4.71	1.63	1.63	57.6	57.6	-4.71	0.88	0.88	8.1	8.1
JAN 10 DEC 3		-4.59	4.19	280.0	-4.59	3.62	3.62	205.3	205.3	-4.59	2.95	2.95	138.4	138.4	-4.59	2.13	2.13	81.9	81.9	-4.59	1.33	1.33	38.2	38.2	-4.59	0.58	0.58	3.7	3.7
DEC 22																													

NOTE - FOR ASPECTS WITH WEST COMPONENTS, THE TIME AND SIGN OF SR AND SS ARE REVERSED.

LATITUDE 38 N
ASPECT SSE - SSW

		10 PCT				20 PCT				SLOPE				30 PCT				40 PCT				50 PCT					
		THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	
		32.7	2.6				27.4	4.9				22.4	6.8				17.5	8.6				13.0	10.1				
JUN 22		-7.25	6.91	1012.0			-7.19	6.55	996.9	-7.14	6.23	976.2			-7.10	5.95	950.9			-7.06	5.71	922.1					
JUN 1	JUL 12	-7.17	6.83	999.7			-7.13	6.48	988.8	-7.09	6.18	972.0			-7.06	5.92	950.2			-7.03	5.68	924.6					
MAY 18	JUL 27	-7.04	6.69	977.4			-7.02	6.38	973.6	-7.01	6.10	963.4			-7.00	5.85	947.7			-6.98	5.64	927.6					
MAY 3	AUG 10	-6.84	6.51	943.4			-6.84	6.23	949.4	-6.84	5.98	946.4			-6.84	5.77	941.1			-6.84	5.57	928.8					
APR 19	AUG 25	-6.58	6.30	896.9			-6.58	6.06	914.3	-6.58	5.85	924.2			-6.58	5.66	927.2			-6.58	5.50	924.1					
APR 4	SEP 9	-6.29	6.07	839.3			-6.29	5.87	868.7	-6.29	5.70	890.1			-6.29	5.55	903.9			-6.29	5.41	910.9					
MAR 21 SEP 23		-6.00	5.83	771.4			-6.00	5.68	812.5	-6.00	5.54	845.1			-6.00	5.43	869.6			-6.00	5.33	886.6					
MAR 7	OCT 8	-5.71	5.58	698.2			-5.71	5.48	749.5	-5.71	5.39	792.2			-5.71	5.31	826.5			-5.71	5.24	852.8					
FEB 20	OCT 22	-5.42	5.35	625.1			-5.42	5.29	684.5	-5.42	5.24	735.5			-5.42	5.20	778.0			-5.42	5.16	812.1					
FEB 7	NOV 5	-5.16	5.14	557.2			-5.16	5.12	622.5	-5.16	5.11	679.8			-5.16	5.09	728.5			-5.16	5.08	768.9					
JAN 23	NOV 19	-4.94	4.94	501.1			-4.94	4.94	570.3	-4.94	4.94	631.7			-4.94	4.94	684.8			-4.94	4.94	729.4					
JAN 10	DEC 3	-4.78	4.78	460.9			-4.78	4.78	532.2	-4.78	4.78	596.0			-4.78	4.78	651.6			-4.78	4.78	698.9					
DEC 22		-4.68	4.68	437.3			-4.68	4.68	509.5	-4.68	4.68	574.4			-4.68	4.68	631.2			-4.68	4.68	679.8					
		YEAR	R.I.				YEAR	R.I.		YEAR	R.I.				YEAR	R.I.				YEAR	R.I.						
		274.863	5230				287.349	5467		297.120	5653				304.243	5788				308.951	5878						
		60 PCT	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY
		8.8	11.5				5.0	12.7	13.8	1.5	13.8				-1.7	14.8				-1.6	15.8						
JUN 22		-7.02	5.49	891.3			-6.99	5.30	859.6	-6.97	5.12	828.0			-6.94	4.96	797.3			-6.92	4.82	767.6					
JUN 1	JUL 12	-7.01	5.47	896.6			-6.98	5.29	867.4	-6.96	5.12	838.0			-6.94	4.97	809.1			-6.93	4.83	781.0					
MAY 18	JUL 27	-6.97	5.44	904.5			-6.97	5.27	879.5	-6.96	5.11	853.8			-6.95	4.97	828.1			-6.94	4.84	802.9					
MAY 3	AUG 10	-6.84	5.40	912.6			-6.84	5.24	893.8	-6.84	5.11	873.4			-6.84	4.98	852.4			-6.84	4.87	831.3					
APR 19	AUG 25	-6.58	5.35	916.3			-6.58	5.22	905.0	-6.58	5.10	891.2			-6.58	4.99	876.0			-6.58	4.89	860.0					
APR 4	SEP 9	-6.29	5.29	912.2			-6.29	5.18	909.1	-6.29	5.09	902.7			-6.29	5.00	893.9			-6.29	4.92	883.5					
MAR 21 SEP 23		-6.00	5.23	897.2			-6.00	5.15	902.4	-6.00	5.08	903.5			-6.00	5.01	901.4			-6.00	4.95	897.0					
MAR 7	OCT 8	-5.71	5.18	871.9			-5.71	5.12	885.1	-5.71	5.07	893.3			-5.71	5.02	897.7			-5.71	4.98	899.1					
FEB 20	OCT 22	-5.42	5.12	838.7			-5.42	5.09	858.8	-5.42	5.06	873.4			-5.42	5.03	883.5			-5.42	5.01	890.2					
FEB 7	NOV 5	-5.16	5.07	801.4			-5.16	5.06	827.0	-5.16	5.05	846.8			-5.16	5.04	861.7			-5.16	5.03	872.8					
JAN 23	NOV 19	-4.94	4.94	766.2			-4.94	4.94	796.0	-4.94	4.94	819.6			-4.94	4.94	838.1			-4.94	4.94	852.5					
JAN 10	DEC 3	-4.78	4.78	738.2			-4.78	4.78	770.5	-4.78	4.78	796.5			-4.78	4.78	817.2			-4.78	4.78	833.7					
DEC 22		-4.68	4.68	720.4			-4.68	4.68	754.0	-4.68	4.68	781.3			-4.68	4.68	803.2			-4.68	4.68	820.8					
		YEAR	R.I.				YEAR	R.I.		YEAR	R.I.				YEAR	R.I.				YEAR	R.I.						
		311.582	5928				312.530	5946		312.167	5939				310.835	5914				308.800	5875						

NOTE - FOR ASPECTS WITH WEST COMPONENTS, THE TIME AND SIGN OF SR AND SS ARE REVERSED.

LATITUDE 38 N
ASPECT NE - NW

		SLOPE				10 PCT				20 PCT				30 PCT				40 PCT				50 PCT			
		THETA		ALPHA		THETA		ALPHA		THETA		ALPHA		THETA		ALPHA		THETA		ALPHA		THETA		ALPHA	
		SR	SS	LY	LY	SR	SS	LY	LY	SR	SS	LY	LY	SR	SS	LY	LY	SR	SS	LY	LY	SR	SS	LY	LY
JUN 22		-7.32	7.17	1020.6		-7.32	6.99	1010.9		-7.32	6.78	993.1		-7.32	6.53	969.0		-7.32	6.24	940.6		-7.32	6.05	911.7	
JUN 1 JUL 12		-7.22	7.05	1000.4		-7.22	6.85	987.7		-7.22	6.62	967.5		-7.22	6.35	941.5		-7.22	6.05	911.7		-7.22	5.74	882.3	
MAY 18 JUL 27		-7.06	6.86	965.1		-7.06	6.63	947.6		-7.06	6.37	923.5		-7.06	6.07	894.4		-7.06	5.74	862.3		-7.06	5.43	832.8	
MAY 3 AUG 10		-6.84	6.60	913.5		-6.84	6.34	889.7		-6.84	6.04	860.4		-6.84	5.70	827.4		-6.84	5.33	792.8		-6.84	5.02	760.8	
APR 19 AUG 25		-6.58	6.30	846.8		-6.58	5.99	815.9		-6.58	5.65	781.0		-6.58	5.27	744.0		-6.58	4.87	706.8		-6.58	4.56	673.8	
APR 4 SEP 9		-6.29	5.98	768.3		-6.29	5.62	730.4		-6.29	5.24	690.2		-6.29	4.82	649.7		-6.29	4.38	610.6		-6.29	4.07	579.2	
MAR 21 SEP 23		-6.00	5.64	680.9		-6.00	5.24	636.6		-6.00	4.81	592.1		-6.00	4.35	549.1		-6.00	3.88	509.1		-6.00	3.43	470.2	
MAR 7 OCT 8		-5.71	5.30	590.9		-5.71	4.86	541.8		-5.71	4.38	494.3		-5.71	3.88	450.0		-5.71	3.38	410.2		-5.71	2.89	370.6	
FEB 20 OCT 22		-5.42	4.97	508.8		-5.42	4.48	452.5		-5.42	3.97	403.4		-5.42	3.43	359.2		-5.42	2.89	320.6		-5.42	2.34	282.8	
FEB 7 NOV 5		-5.16	4.67	428.2		-5.16	4.14	374.1		-5.16	3.58	324.9		-5.16	3.00	281.7		-5.16	2.43	245.2		-5.16	1.88	206.7	
JAN 23 NOV 19		-4.94	4.41	366.9		-4.94	3.85	312.3		-4.94	3.25	263.8		-4.94	2.63	222.2		-4.94	2.02	188.1		-4.94	1.47	150.2	
JAN 10 DEC 3		-4.78	4.22	324.3		-4.78	3.62	289.9		-4.78	2.99	222.5		-4.78	2.35	182.3		-4.78	1.71	150.2		-4.78	1.16	119.2	
DEC 22		-4.68	4.11	299.7		-4.68	3.49	245.6		-4.68	2.84	198.7		-4.68	2.17	159.9		-4.68	1.52	129.2		-4.68	0.97	96.7	
		YEAR		R.I.		YEAR		R.I.		YEAR		R.I.		YEAR		R.I.		YEAR		R.I.		YEAR		R.I.	
		246.891		.4697		233.083		.4435		219.095		.4168		205.497		.3910		192.750		.3667		180.150		.3417	
		181.150				170.805		.3250		161.734		.3077		153.855		.2927		146.984				139.150			

NOTE - FOR ASPECTS WITH WEST COMPONENTS, THE TIME AND SIGN OF SR AND SS ARE REVERSED.

LATITUDE 38 N
ASPECT SE - SW

		SLOPE																													
		10 PCT			20 PCT			30 PCT			40 PCT			50 PCT																	
		THETA	ALPHA	LY	SR	SS	LY	THETA	ALPHA	LY	SR	SS	LY	THETA	ALPHA	LY	SR	SS	LY	THETA	ALPHA	LY	SR	SS	LY	THETA	ALPHA	LY			
		33.9	4.9					29.6	9.2					25.4	13.0					21.4	16.4					17.5	19.4				
JUN 22		-7.32	6.81	1014.3	-7.32	6.34	1003.3	-7.32	5.93	988.1	-7.32	5.56	969.3	-7.32	5.24	947.7															
JUN 1 JUL 12		-7.22	6.72	1000.9	-7.22	6.27	993.2	-7.22	5.87	981.1	-7.22	5.51	965.1	-7.22	5.20	946.1															
MAY 18 JUL 27		-7.06	6.58	976.9	-7.06	6.15	974.7	-7.06	5.77	967.8	-7.06	5.43	951.3	-7.06	5.13	941.8															
MAY 3 AUG 10		-6.84	6.39	940.6	-6.84	6.00	945.9	-6.84	5.64	946.0	-6.84	5.33	941.3	-6.84	5.05	932.4															
APR 19 AUG 25		-6.58	6.17	891.3	-6.58	5.81	905.4	-6.58	5.48	913.8	-6.58	5.20	916.7	-6.58	4.94	914.9															
APR 4 SEP 9		-6.29	5.93	830.9	-6.29	5.60	854.0	-6.29	5.31	871.1	-6.29	5.06	882.2	-6.29	4.83	887.9															
MAR 21 SEP 23		-6.00	5.68	760.2	-6.00	5.39	792.1	-6.00	5.13	817.6	-6.00	4.91	836.6	-6.00	4.71	849.7															
MAR 7 OCT 8		-5.71	5.42	684.6	-5.71	5.17	724.1	-5.71	4.95	757.0	-5.71	4.76	783.1	-5.71	4.59	802.9															
FEB 20 OCT 22		-5.42	5.18	609.5	-5.42	4.97	655.0	-5.42	4.78	693.9	-5.42	4.62	725.9	-5.42	4.48	751.3															
FEB 7 NOV 5		-5.16	4.96	540.2	-5.16	4.78	590.0	-5.16	4.62	633.3	-5.16	4.49	669.7	-5.16	4.37	699.3															
JAN 23 NOV 19		-4.94	4.77	483.2	-4.94	4.62	535.7	-4.94	4.49	581.8	-4.94	4.38	621.2	-4.94	4.28	653.8															
JAN 10 DEC 3		-4.78	4.63	442.6	-4.78	4.50	496.6	-4.78	4.40	544.3	-4.78	4.30	585.4	-4.78	4.22	619.8															
DEC 22		-4.68	4.55	418.7	-4.68	4.43	473.4	-4.68	4.34	521.9	-4.68	4.25	563.8	-4.68	4.18	599.1															
		YEAR	R.e.		YEAR	R.e.		YEAR	R.e.		YEAR	R.e.		YEAR	R.e.		YEAR	R.e.		YEAR	R.e.		YEAR	R.e.		YEAR	R.e.				
		271.386	5163		281.020	5347		288.548	5490		293.978	5593		297.473	5660		297.473	5660		297.473	5660		297.473	5660		297.473	5660				
		SLOPE																													
		60 PCT			70 PCT			80 PCT			90 PCT			100 PCT																	
		THETA	ALPHA	LY	SR	SS	LY	THETA	ALPHA	LY	SR	SS	LY	THETA	ALPHA	LY	SR	SS	LY	THETA	ALPHA	LY	SR	SS	LY	THETA	ALPHA	LY			
		14.0	22.0					10.6	24.4					7.6	26.5					4.9	28.3					2.4	30.0				
JUN 22		-7.32	4.95	924.3	-7.32	4.69	900.1	-7.32	4.46	875.7	-7.32	4.25	851.8	-7.32	4.07	828.5															
JUN 1 JUL 12		-7.22	4.92	925.0	-7.22	4.66	902.7	-7.22	4.44	880.1	-7.22	4.24	857.7	-7.22	4.06	835.7															
MAY 18 JUL 27		-7.06	4.87	924.6	-7.06	4.63	905.7	-7.06	4.41	885.9	-7.06	4.22	866.1	-7.06	4.05	846.4															
MAY 3 AUG 10		-6.84	4.80	920.5	-6.84	4.58	906.2	-6.84	4.38	890.6	-6.84	4.20	874.3	-6.84	4.04	857.7															
APR 19 AUG 25		-6.58	4.72	909.3	-6.58	4.51	900.6	-6.58	4.33	890.0	-6.58	4.17	878.0	-6.58	4.03	865.2															
APR 4 SEP 9		-6.29	4.63	889.0	-6.29	4.45	886.4	-6.29	4.29	881.2	-6.29	4.14	873.9	-6.29	4.01	865.4															
MAR 21 SEP 23		-6.00	4.53	857.6	-6.00	4.38	861.2	-6.00	4.24	861.4	-6.00	4.11	859.0	-6.00	4.00	854.8															
MAR 7 OCT 8		-5.71	4.44	817.0	-5.71	4.30	826.3	-5.71	4.18	831.7	-5.71	4.08	834.0	-5.71	3.98	833.9															
FEB 20 OCT 22		-5.42	4.35	770.6	-5.42	4.24	784.8	-5.42	4.14	794.6	-5.42	4.05	801.0	-5.42	3.97	804.7															
FEB 7 NOV 5		-5.16	4.27	722.8	-5.16	4.17	740.8	-5.16	4.09	756.3	-5.16	4.02	763.9	-5.16	3.95	770.7															
JAN 23 NOV 19		-4.94	4.20	680.2	-4.94	4.12	701.0	-4.94	4.06	717.0	-4.94	4.00	729.1	-4.94	3.94	738.1															
JAN 10 DEC 3		-4.78	4.15	647.9	-4.78	4.09	670.5	-4.78	4.03	688.2	-4.78	3.98	701.9	-4.78	3.93	712.3															
DEC 22		-4.68	4.12	628.1	-4.68	4.06	651.6	-4.68	4.01	670.2	-4.68	3.97	684.8	-4.68	3.93	696.1															

NOTE - FOR ASPECTS WITH WEST COMPONENTS, THE TIME AND SIGN OF SR AND SS ARE REVERSED.

LATITUDE 38 N

NOTE - FOR ASPECTS WITH WEST COMPONENTS, THE TIME AND SIGN OF SR AND SS ARE REVERSED.

LATITUDE 38 N
ASPECT ESE - WSW

SLOPE																								
10 PCT					20 PCT					30 PCT					40 PCT					50 PCT				
THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY
35.6	6.5				33.0	12.5				30.2	17.9				27.4	22.7				24.6	27.0			
JUN 22	-7.32	6.78	1016.6		-7.32	6.26	1008.6			-7.32	5.78	997.2			-7.32	5.35	983.0			-7.32	4.96	966.6		
JUN 1 JUL 12	-7.22	6.69	1001.7		-7.22	6.18	995.6			-7.22	5.71	986.2			-7.22	5.29	973.7			-7.22	4.91	959.0		
MAY 18 JUL 27	-7.06	6.54	975.2		-7.06	6.05	972.4			-7.06	5.59	966.0			-7.06	5.18	956.6			-7.06	4.81	944.6		
MAY 3 AUG 10	-6.84	6.34	935.4		-6.84	5.86	937.0			-6.84	5.43	935.0			-6.84	5.04	929.6			-6.84	4.69	921.4		
APR 19 AUG 25	-6.58	6.10	882.2		-6.58	5.65	888.9			-6.58	5.24	891.9			-6.58	4.87	891.4			-6.58	4.54	887.7		
APR 4 SEP 9	-6.29	5.84	817.5		-6.29	5.41	829.6			-6.29	5.03	837.9			-6.29	4.68	842.4			-6.29	4.37	843.4		
MAR 21 SEP 23	-6.00	5.57	743.0		-6.00	5.17	760.1			-6.00	4.81	773.5			-6.00	4.48	782.9			-6.00	4.20	788.5		
MAR 7 OCT 8	-5.71	5.30	664.0		-5.71	4.92	685.5			-5.71	4.59	703.3			-5.71	4.29	717.0			-5.71	4.03	726.9		
FEB 20 OCT 22	-5.42	5.04	586.3		-5.42	4.69	611.2			-5.42	4.38	632.5			-5.42	4.10	649.8			-5.42	3.86	663.0		
FEB 7 NOV 5	-5.16	4.80	515.1		-5.16	4.47	542.5			-5.16	4.18	566.4			-5.16	3.93	586.2			-5.16	3.71	602.0		
JAN 23 NOV 19	-4.94	4.60	457.0		-4.94	4.29	485.9			-4.94	4.02	511.4			-4.94	3.79	532.9			-4.94	3.58	550.4		
JAN 10 DEC 3	-4.78	4.45	415.8		-4.78	4.16	445.5			-4.78	3.90	471.9			-4.78	3.68	494.4			-4.78	3.49	512.9		
DEC 22	-4.68	4.36	391.7		-4.68	4.07	421.8			-4.68	3.83	448.5			-4.68	3.62	471.5			-4.68	3.43	490.5		
YEAR					YEAR	YEAR	R.I.	YEAR	R.I.	YEAR	YEAR	R.I.	YEAR	R.I.	YEAR	YEAR	R.I.	YEAR	R.I.	YEAR	YEAR	R.I.	YEAR	R.I.
266.053					271.099	271.099	5158	274.842	5259	277.8262	5275	278.451	5298											

SLOPE																								
60 PCT					70 PCT					80 PCT					90 PCT					100 PCT				
THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY
21.9	30.8				19.4	34.2				17.0	37.1				14.8	39.7				12.8	42.1			
JUN 22	-7.32	4.62	948.7		-7.32	4.31	930.0			-7.32	4.03	911.1			-7.32	3.79	892.5			-7.32	3.57	874.3		
JUN 1 JUL 12	-7.22	4.57	942.6		-7.22	4.26	925.5			-7.22	4.00	907.5			-7.22	3.76	890.0			-7.22	3.55	872.7		
MAY 18 JUL 27	-7.06	4.49	930.8		-7.06	4.19	915.7			-7.06	3.94	900.0			-7.06	3.71	884.1			-7.06	3.50	868.4		
MAY 3 AUG 10	-6.84	4.37	901.0		-6.84	4.10	899.1			-6.84	3.85	886.1			-6.84	3.63	872.7			-6.84	3.44	859.1		
APR 19 AUG 25	-6.58	4.24	881.4		-6.58	3.98	873.1			-6.58	3.75	863.5			-6.58	3.53	853.0			-6.58	3.36	842.1		
APR 4 SEP 9	-6.29	4.10	841.5		-6.29	3.85	837.2			-6.29	3.64	831.2			-6.29	3.45	823.9			-6.29	3.28	815.8		
MAR 21 SEP 23	-6.00	3.95	790.9		-6.00	3.72	790.6			-6.00	3.52	788.2			-6.00	3.35	784.1			-6.00	3.20	779.0		
MAR 7 OCT 8	-5.71	3.79	733.2		-5.71	3.59	736.5			-5.71	3.41	737.4			-5.71	3.25	736.4			-5.71	3.11	734.0		
FEB 20 OCT 22	-5.42	3.65	672.6		-5.42	3.46	679.0			-5.42	3.30	682.7			-5.42	3.16	684.4			-5.42	3.03	684.6		
FEB 7 NOV 5	-5.16	3.52	614.1		-5.16	3.35	622.9			-5.16	3.20	628.9			-5.16	3.07	632.6			-5.16	2.95	634.6		
JAN 23 NOV 19	-4.94	3.41	564.2		-4.94	3.25	574.7			-4.94	3.11	582.3			-4.94	3.00	587.5			-4.94	2.89	591.0		
JAN 10 DEC 3	-4.78	3.32	527.7		-4.78	3.18	539.2			-4.78	3.05	547.8			-4.78	2.94	554.0			-4.78	2.84	558.3		
DEC 22	-4.68	3.27	505.8		-4.68	3.14	517.8			-4.68	3.02	526.9			-4.68	2.91	533.7			-4.68	2.82	538.5		
YEAR					YEAR	YEAR	R.I.	YEAR	R.I.	YEAR	YEAR	R.I.	YEAR	R.I.	YEAR	YEAR	R.I.	YEAR	R.I.	YEAR	YEAR	R.I.	YEAR	R.I.
278.569					277.820	277.820	5286	276.408	5259	274.523	5223	272.302	5181											

SLOPE																								
60 PCT					70 PCT					80 PCT					90 PCT					100 PCT				
THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY
21.9	30.8				19.4	34.2				17.0	37.1				14.8	39.7				12.8	42.1			
JUN 22	-7.32	4.62	948.7		-7.32	4.31	930.0			-7.32	4.03	911.1			-7.32	3.79	892.5			-7.32	3.57	874.3		
JUN 1 JUL 12	-7.22	4.57	942.6		-7.22	4.26	925.3			-7.22	4.00	907.5			-7.22	3.76	890.0			-7.22	3.55	872.7		
MAY 18 JUL 27	-7.06	4.49	930.8		-7.06	4.19	915.7			-7.06	3.94	900.0			-7.06	3.71	884.1			-7.06	3.50	868.4		
MAY 3 AUG 10	-6.84	4.37	911.0		-6.84	4.10	899.1			-6.84	3.85	886.1			-6.84	3.63	872.7			-6.84	3.44	859.1		
APR 19 AUG 25	-6.58	4.24	881.4		-6.58	3.98	873.1			-6.58	3.75	863.5			-6.58	3.55	853.0			-6.58	3.36	842.1		
APR 4 SEP 9	-6.29	4.10	841.5		-6.29	3.85	837.2			-6.29	3.64	831.2			-6.29	3.45	823.9			-6.29	3.28	815.8		
MAR 21 SEP 23	-6.00	3.95	790.9		-6.00	3.72	790.6			-6.00	3.52	788.2			-6.00	3.35	784.1			-6.00	3.20	779.0		
MAR 7 OCT 8	-5.71	3.79	733.2		-5.71	3.59	736.5			-5.71	3.41	737.4			-5.71	3.25	736.4			-5.71	3.11	734.0		
FEB 20 OCT 22	-5.42	3.65	672.6		-5.42	3.46	679.0			-5.42	3.30	682.7			-5.42	3.16	684.4			-5.42	3.03	684.4		
FEB 7 NOV 5	-5.16	3.52	614.1		-5.16	3.35	622.9			-5.16	3.20	628.9			-5.16	3.07	632.6			-5.16	2.95	634.6		
JAN 23 NOV 19	-4.94	3.41	564.2		-4.94	3.25	574.7			-4.94	3.11	582.3			-4.94	3.00	587.5			-4.94	2.89	591.0		
JAN 10 DEC 3	-4.78	3.32	527.7		-4.78	3.18	539.2			-4.78	3.05	547.8			-4.78	2.94	554.0			-4.78	2.84	558.3		
DEC 22	-4.68	3.27	505.8		-4.68	3.14	517.8			-4.68	3.02	526.9			-4.68	2.91	533.7			-4.68	2.82	538.5		
YEAR	278.569	49300			YEAR	277.820	5286			YEAR	276.408	5259			YEAR	274.523	5223			YEAR	272.302	5181		

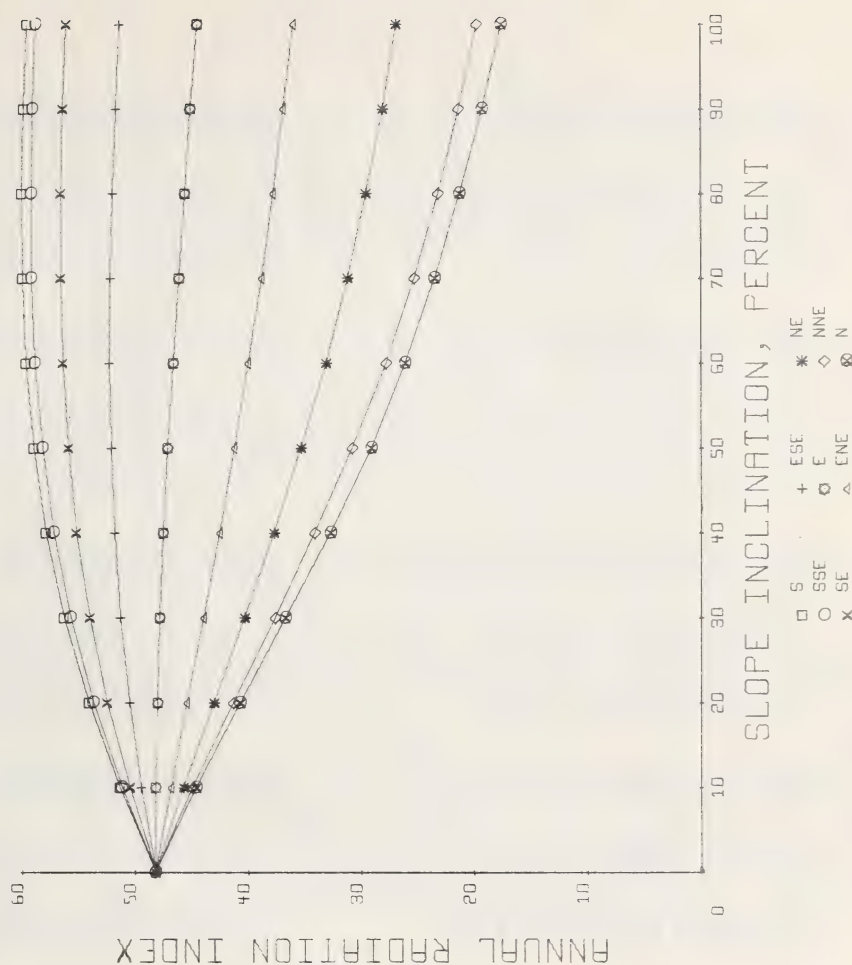
NOTE - FOR ASPECTS WITH WEST COMPONENTS, THE TIME AND SIGN OF SR AND SS ARE REVERSED.

LATITUDE 38.4
ASPECT E - W

		10 PCT				20 PCT				SLOPE				30 PCT				40 PCT				50 PCT				
		THETA	ALPHA	LY	SS	SR	SS	LY	THETA	ALPHA	LY	SS	SR	THETA	ALPHA	LY	SS	THETA	ALPHA	LY	SS	SR	SS	LY	THETA	ALPHA
		37.8	7.2			37.1	14.2		36.1	20.8			34.9	26.9				33.4	32.4						33.4	32.4
JUN 22		-7.32	6.83	1018.4		-7.32	6.33	1011.1		-7.32	5.84	1000.0		-7.32	5.38	986.0		-7.32	4.95	970.1					-7.32	4.95
JUN 1 JUL 12		-7.22	6.73	1001.6		-7.22	6.24	994.7		-7.22	5.75	984.2		-7.22	5.29	970.9		-7.22	4.87	955.7					-7.22	4.87
MAY 18 JUL 27		-7.06	6.57	972.1		-7.06	6.08	965.8		-7.06	5.60	956.2		-7.06	5.15	944.0		-7.06	4.73	930.0					-7.06	4.73
MAY 3 AUG 10		-6.84	6.35	928.3		-6.84	5.86	922.9		-6.84	5.39	914.5		-6.84	4.95	903.9		-6.84	4.55	891.6					-6.84	4.55
APR 19 AUG 25		-6.58	6.09	870.4		-6.58	5.61	866.0		-6.58	5.15	859.2		-6.58	4.72	850.4		-6.58	4.33	840.2					-6.58	4.33
APR 4 SEP 9		-6.29	5.81	801.0		-6.29	5.34	797.8		-6.29	4.89	792.6		-6.29	4.47	785.9		-6.29	4.09	777.8					-6.29	4.09
MAR 21 SEP 23		-6.00	5.52	722.0		-6.00	5.05	719.9		-6.00	4.61	716.4		-6.00	4.21	711.7		-6.00	3.84	706.0					-6.00	3.84
MAR 7 OCT 8		-5.71	5.23	639.1		-5.71	4.76	638.1		-5.71	4.34	636.3		-5.71	3.94	633.5		-5.71	3.59	629.8					-5.71	3.59
FEB 20 OCT 22		-5.42	4.94	558.4		-5.42	4.49	558.4		-5.42	4.07	557.9		-5.42	3.69	556.8		-5.42	3.35	554.9					-5.42	3.35
FEB 7 NOV 5		-5.16	4.69	485.3		-5.16	4.24	486.0		-5.16	3.83	486.6		-5.16	3.46	486.8		-5.16	3.13	486.5					-5.16	3.13
JAN 23 NOV 19		-4.94	4.47	426.0		-4.94	4.02	427.2		-4.94	3.62	428.6		-4.94	3.26	429.8		-4.94	2.95	430.5					-4.94	2.95
JAN 10 DEC 3		-4.78	4.30	384.3		-4.78	3.86	385.6		-4.78	3.47	387.7		-4.78	3.12	389.5		-4.78	2.81	390.9					-4.78	2.81
DEC 22		-4.68	4.20	359.9		-4.68	3.77	361.7		-4.68	3.38	363.9		-4.68	3.03	366.0		-4.68	2.73	367.7					-4.68	2.73
		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.	YEAR	R.I.		YEAR	R.I.	YEAR	R.I.		YEAR	R.I.	YEAR	R.I.		YEAR	R.I.	YEAR	R.I.
		259.453	.4938		258.641	.4921		257.166	.4893	255.188	.4855		252.792	.4810											252.792	.4810
		60 PCT				70 PCT				SLOPE				80 PCT				90 PCT				100 PCT				
		THETA	ALPHA	LY	SS	SR	SS	LY	THETA	ALPHA	LY	SS	SR	THETA	ALPHA	LY	SS	THETA	ALPHA	LY	SS	SR	SS	LY	THETA	ALPHA
		31.9	37.3			30.3	41.6		28.7	45.4			27.2	48.8				25.8	51.8						25.8	51.8
JUN 22		-7.32	4.56	953.1		-7.32	4.21	935.6		-7.32	3.89	918.1		-7.32	3.61	901.1		-7.32	3.36	884.6					-7.32	3.36
JUN 1 JUL 12		-7.22	4.48	939.4		-7.22	4.13	922.6		-7.22	3.82	905.8		-7.22	3.55	889.4		-7.22	3.30	873.3					-7.22	3.30
MAY 18 JUL 27		-7.06	4.35	915.0		-7.06	4.01	899.4		-7.06	3.71	883.8		-7.06	3.44	868.4		-7.06	3.20	853.5					-7.06	3.20
MAY 3 AUG 10		-6.84	4.18	878.3		-6.84	3.85	864.4		-6.84	3.56	850.3		-6.84	3.30	836.5		-6.84	3.07	823.0					-6.84	3.07
APR 19 AUG 25		-6.58	3.97	828.9		-6.58	3.66	817.1		-6.58	3.38	805.0		-6.58	3.13	793.0		-6.58	2.91	781.2					-6.58	2.91
APR 4 SEP 9		-6.29	3.75	768.9		-6.29	3.45	759.2		-6.29	3.18	749.3		-6.29	2.94	739.3		-6.29	2.73	729.4					-6.29	2.73
MAR 21 SEP 23		-6.00	3.51	699.3		-6.00	3.23	692.0		-6.00	2.97	684.2		-6.00	2.75	676.3		-6.00	2.55	668.3					-6.00	2.55
MAR 7 OCT 8		-5.71	3.28	625.3		-5.71	3.00	620.2		-5.71	2.76	614.5		-5.71	2.55	608.6		-5.71	2.37	602.5					-5.71	2.37
FEB 20 OCT 22		-5.42	3.06	552.3		-5.42	2.79	549.1		-5.42	2.57	545.3		-5.42	2.37	541.1		-5.42	2.19	536.6					-5.42	2.19
FEB 7 NOV 5		-5.16	2.85	485.4		-5.16	2.60	483.7		-5.16	2.38	481.3		-5.16	2.20	478.6		-5.16	2.03	475.5					-5.16	2.03
JAN 23 NOV 19		-4.94	2.67	430.6		-4.94	2.44	430.0		-4.94	2.23	428.7		-4.94	2.05	427.0		-4.94	1.90	425.0					-4.94	1.90
JAN 10 DEC 3		-4.78	2.55	391.7		-4.78	2.32	391.8		-4.78	2.12	391.3		-4.78	1.95	390.3		-4.78	1.80	388.8					-4.78	1.80
DEC 22		-4.68	2.47	368.9		-4.68	2.24	369.3		-4.68	2.05	369.2		-4.68	1.89	368.6		-4.68	1.74	367.5					-4.68	1.74
		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.	YEAR	R.I.		YEAR	R.I.	YEAR	R.I.		YEAR	R.I.	YEAR	R.I.		YEAR	R.I.	YEAR	R.I.
		250.076	.4758		247.138	.4702		244.076	.4644	240.976	.4585		237.875	.4526											237.875	.4526

NOTE - FOR ASPECTS WITH WEST COMPONENTS, THE TIME AND SIGN OF SK AND SS ARE REVERSED.

RADIATION INDEXES FOR VARIOUS FACETS AT LATITUDE 40 N



HORIZONTAL SURFACE

LATITUDE 40 N

	SR	SS	LY
JUN 22	-7.43	7.43	1022.7
JUN 1 JUL 12	-7.32	7.32	1004.2
MAY 18 JUL 27	-7.14	7.14	971.5
MAY 3 AUG 10	-6.90	6.90	923.5
APR 19 AUG 25	-6.62	6.62	860.7
APR 4 SEP 9	-6.32	6.32	786.3
MAR 21 SEP 23	-6.00	6.00	702.5
MAR 7 OCT 8	-5.68	5.68	615.6
FEB 20 OCT 22	-5.38	5.38	531.8
FEB 7 NOV 5	-5.10	5.10	456.5
JAN 23 NOV 19	-4.86	4.86	395.9
JAN 10 DEC 3	-4.68	4.68	353.5
DEC 22	-4.57	4.57	328.9

YEAR R.I.
253.658 4826

LATITUDE 40 N
ASPECT N -

		SLOPE				30 PCT				40 PCT				50 PCT			
		10 PCT		20 PCT		THETA		ALPHA		THETA		ALPHA		THETA		ALPHA	
		THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA
		45.7	0.0	51.3	0.0	56.7	0.0	61.8	0.0	66.6	0.0	71.0	0.0	75.0	0.0	79.0	0.0
		SR	SS	LY	SS	SR	SS	LY	SS	SR	SS	LY	SS	SR	SS	LY	SS
JUN 22		-7.43	7.43	1021.6	-7.43	7.43	1010.7	-7.43	7.43	991.1	-7.43	7.43	964.5	-7.43	7.43	932.6	932.6
JUN 1 JUL 12		-7.32	7.32	998.1	-7.32	7.32	982.6	-7.32	7.32	956.8	-7.32	7.32	928.4	-7.32	7.32	893.4	893.4
MAY 18 JUL 27		-7.14	7.14	957.3	-7.14	7.14	934.2	-7.14	7.14	903.5	-7.14	7.14	867.1	-7.14	7.14	826.8	826.8
MAY 3 AUG 10		-6.90	6.90	898.3	-6.90	6.90	865.0	-6.90	6.90	825.2	-6.90	6.90	780.8	-6.90	6.90	733.7	733.7
APR 19 AUG 25		-6.62	6.62	823.1	-6.62	6.62	778.2	-6.62	6.62	728.1	-6.62	6.62	674.7	-6.62	6.62	619.9	619.9
APR 4 SEP 9		-6.32	6.32	735.9	-6.32	6.32	679.4	-6.32	6.32	619.0	-6.32	6.32	556.7	-6.32	6.32	494.4	494.4
MAR 21 SEP 23		-6.00	6.00	640.3	-6.00	6.00	573.2	-6.00	6.00	503.5	-6.00	6.00	433.4	-6.00	6.00	364.7	364.7
MAR 7 OCT 8		-5.61	5.61	543.6	-5.61	5.61	468.2	-5.61	5.61	391.7	-5.61	5.61	316.5	-5.61	5.61	244.6	244.6
FEB 20 OCT 22		-5.24	5.24	452.6	-5.24	5.24	372.1	-5.24	5.24	292.4	-5.24	5.24	216.3	-5.24	5.24	146.2	146.2
FEB 7 NOV 5		-4.89	4.89	373.2	-4.89	4.89	290.2	-4.89	4.89	210.5	-4.89	4.89	137.2	-4.89	4.89	73.4	73.4
JAN 23 NOV 19		-4.59	4.59	310.6	-4.59	4.59	227.5	-4.59	4.59	150.1	-4.59	4.59	82.0	-4.59	4.59	28.0	28.0
JAN 10 DEC 3		-4.37	4.37	267.7	-4.37	4.37	185.5	-4.37	4.37	111.1	-4.37	4.37	48.6	-4.37	4.37	6.0	6.0
DEC 22		-4.23	4.23	243.2	-4.23	4.23	162.1	-4.23	4.23	90.0	-4.23	4.23	32.1	-4.23	4.23	0.0	0.0
		YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.
		234.548	.4462	214.006	.4072	192.933	.3671	172.271	.3278	153.243	.2916	137.380	.2614	123.821	.2356	112.019	.2131
		137.380	.2614	123.821	.2356	112.019	.2131	101.887	.1938	92.944	.1768	85.0	.1532	75.0	.1374	66.6	.1239

NOTE - FOR ASPECTS WITH WEST COMPONENTS, THE TIME AND SIGN OF SR AND SS ARE REVERSED.

LATITUDE 40 N
ASPECT S -

		SLOPE																				
		10 PCT			20 PCT			30 PCT			40 PCT			50 PCT								
		THETA	ALPHA	LY	SR	SS	LY	THETA	ALPHA	LY	SR	SS	LY	THETA	ALPHA	LY	THETA	ALPHA	LY	SR	SS	LY
		34.3	0.0		28.7	0.0		23.3	0.0		18.2	0.0		13.4	0.0							
JUN 22		-7.15	7.15	1015.3	-6.92	6.92	1001.1	-6.72	6.72	980.5	-6.55	6.55	954.7	-6.40	6.40	925.0						
JUN 1 JUL 12		-7.06	7.06	1001.7	-6.85	6.85	992.0	-6.67	6.67	975.6	-6.51	6.51	953.5	-6.37	6.37	927.2						
MAY 18 JUL 27		-6.92	6.92	977.2	-6.74	6.74	975.1	-6.58	6.58	965.8	-6.44	6.44	950.2	-6.32	6.32	929.7						
MAY 3 AUG 10		-6.73	6.73	940.2	-6.59	6.59	948.6	-6.46	6.46	949.1	-6.35	6.35	942.6	-6.25	6.25	930.3						
MAY 19 AUG 25		-6.50	6.50	890.2	-6.40	6.40	911.0	-6.32	6.32	923.3	-6.24	6.24	927.8	-6.18	6.18	925.7						
APR 4 SEP 9		-6.26	6.26	829.0	-6.21	6.21	863.0	-6.16	6.16	888.0	-6.12	6.12	904.6	-6.09	6.09	913.7						
MAR 21 SEP 23		-6.00	6.00	757.8	-6.00	6.00	804.6	-6.00	6.00	842.3	-6.00	6.00	871.2	-6.00	6.00	892.0						
MAR 7 OCT 8		-5.68	5.68	681.6	-5.68	5.68	739.6	-5.68	5.68	788.7	-5.68	5.68	828.9	-5.68	5.68	860.5						
FEB 20 OCT 22		-5.38	5.38	605.9	-5.38	5.38	672.7	-5.38	5.38	730.8	-5.38	5.38	779.9	-5.38	5.38	820.3						
FEB 7 NOV 5		-5.10	5.10	536.1	-5.10	5.10	608.9	-5.10	5.10	673.4	-5.10	5.10	729.0	-5.10	5.10	775.8						
JAN 23 NOV 19		-4.86	4.86	478.6	-4.86	4.86	555.0	-4.86	4.86	623.5	-4.86	4.86	683.3	-4.86	4.86	734.3						
JAN 10 DEC 3		-4.68	4.68	437.7	-4.68	4.68	515.9	-4.68	4.68	586.5	-4.68	4.68	648.6	-4.68	4.68	702.0						
DEC 22		-4.57	4.57	413.6	-4.57	4.57	492.6	-4.57	4.57	564.1	-4.57	4.57	627.2	-4.57	4.57	681.7						
		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.	
		270.580	.5148		284.802	.5419		296.107	.5634		304.560	.5795		310.403	.5906							
		60 PCT			70 PCT			80 PCT			90 PCT			100 PCT								
		THETA	ALPHA	LY	THETA	ALPHA	LY	THETA	ALPHA	LY	THETA	ALPHA	LY	THETA	ALPHA	LY						
		9.0	0.0		5.0	0.0		1.3	0.0		-2.0	0.0		-5.0	0.0							
JUN 22		-6.26	6.26	893.0	-6.15	6.15	859.8	-6.04	6.04	826.6	-5.94	5.94	794.2	-5.85	5.85	762.9						
JUN 1 JUL 12		-6.25	6.25	898.2	-6.13	6.13	867.6	-6.04	6.04	836.7	-5.95	5.95	806.2	-5.87	5.87	776.5						
MAY 18 JUL 27		-6.21	6.21	905.8	-6.12	6.12	879.7	-6.03	6.03	852.7	-5.95	5.95	825.6	-5.88	5.88	798.1						
MAY 3 AUG 10		-6.17	6.17	913.7	-6.09	6.09	894.1	-6.02	6.02	872.7	-5.96	5.96	850.5	-5.91	5.91	828.1						
APR 19 AUG 25		-6.12	6.12	918.2	-6.06	6.06	906.8	-6.02	6.02	892.6	-5.97	5.97	876.8	-5.94	5.94	859.9						
APR 4 SEP 9		-6.06	6.06	916.5	-6.03	6.03	914.4	-6.01	6.01	908.6	-5.99	5.99	900.2	-5.97	5.97	890.0						
MAR 21 SEP 23		-6.00	6.00	905.7	-6.00	6.00	913.6	-6.00	6.00	916.9	-6.00	6.00	916.6	-6.00	6.00	913.6						
MAR 7 OCT 8		-5.68	5.68	884.4	-5.68	5.68	901.7	-5.68	5.68	913.5	-5.68	5.68	921.1	-5.68	5.68	925.2						
FEB 20 OCT 22		-5.38	5.38	852.5	-5.38	5.38	877.6	-5.38	5.38	896.7	-5.38	5.38	910.7	-5.38	5.38	920.9						
FEB 7 NOV 5		-5.10	5.10	814.3	-5.10	5.10	845.3	-5.10	5.10	869.9	-5.10	5.10	889.0	-5.10	5.10	903.69						
JAN 23 NOV 19		-4.86	4.86	776.9	-4.86	4.86	812.0	-4.86	4.86	840.3	-4.86	4.86	863.0	-4.86	4.86	881.1						
JAN 10 DEC 3		-4.68	4.68	747.0	-4.68	4.68	784.4	-4.68	4.68	815.0	-4.68	4.68	839.8	-4.68	4.68	859.9						
DEC 22		-4.57	4.57	727.9	-4.57	4.57	766.5	-4.57	4.57	798.2	-4.57	4.57	824.1	-4.57	4.57	845.3						
		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.	
		313.986	.5974		315.722	.6007		316.005	.6012		315.197	.5997		313.586	.5966							

NOTE - FOR ASPECTS WITH WEST COMPONENTS, THE TIME AND SIGN OF SR AND SS ARE REVERSED.

		10 PCT				20 PCT				SLOPE				30 PCT				40 PCT				50 PCT					
		THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	
		45.2	3.1				50.3	6.7				55.0	11.1				59.3	16.2				63.1	22.2				
		YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.
		236.051	4491	217.243	4133	198.087	3769	179.399	3413	161.959	3081	146.450	2786	133.376	2558	122.177	2325	112.556	2141	104.131	90.000	0.00	0.00	0.00	0.00	0.00	
		SLOPE																									
		60 PCT				70 PCT				80 PCT				90 PCT				100 PCT									
		THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	
		66.3	29.3				68.8	37.4				70.7	46.5				72.0	56.1				72.7	65.8				
		SLOPE																									
		60 PCT				70 PCT				80 PCT				90 PCT				100 PCT									
		THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	
		66.3	29.3				68.8	37.4				70.7	46.5				72.0	56.1				72.7	65.8				
		SLOPE																									
		60 PCT				70 PCT				80 PCT				90 PCT				100 PCT									
		THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	
		66.3	29.3				68.8	37.4				70.7	46.5				72.0	56.1				72.7	65.8				
		SLOPE																									
		60 PCT				70 PCT				80 PCT				90 PCT				100 PCT									
		THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	
		66.3	29.3				68.8	37.4				70.7	46.5				72.0	56.1				72.7	65.8				
		SLOPE																									
		60 PCT				70 PCT				80 PCT				90 PCT				100 PCT									
		THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	
		66.3	29.3				68.8	37.4				70.7	46.5				72.0	56.1				72.7	65.8				
		SLOPE																									
		60 PCT				70 PCT				80 PCT				90 PCT				100 PCT									
		THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	
		66.3	29.3				68.8	37.4				70.7	46.5				72.0	56.1				72.7	65.8				
		SLOPE																									
		60 PCT				70 PCT				80 PCT				90 PCT				100 PCT									
		THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	
		66.3	29.3				68.8	37.4				70.7	46.5				72.0	56.1				72.7	65.8				
		SLOPE																									
		60 PCT				70 PCT				80 PCT				90 PCT				100 PCT									
		THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	
		66.3	29.3				68.8	37.4				70.7	46.5				72.0	56.1				72.7	65.8				
		SLOPE																									
		60 PCT				70 PCT				80 PCT				90 PCT				100 PCT									
		THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	
		66.3	29.3				68.8	37.4				70.7	46.5				72.0	56.1				72.7	65.8				
		SLOPE																									
		60 PCT				70 PCT				80 PCT				90 PCT				100 PCT									
		THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	
		66.3	29.3				68.8	37.4				70.7	46.5				72.0	56.1				72.7	65.8				
		SLOPE																									
		60 PCT				70 PCT				80 PCT				90 PCT				100 PCT									
		THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	
		66.3	29.3				68.8	37.4				70.7	46.5				72.0	56.1				72.7	65.8				
		SLOPE																									
		60 PCT				70 PCT				80 PCT				90 PCT				100 PCT									
		THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	
		66.3	29.3				68.8	37.4				70.7	46.5				72.0	56.1				72.7	65.8				
		SLOPE																									
		60 PCT				70 PCT				80 PCT				90 PCT				100 PCT									
		THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	
		66.3	29.3				68.8	37.4				70.7	46.5				72.0	56.1				72.7	65.8				
		SLOPE																									
		60 PCT				70 PCT				80 PCT				90 PCT				100 PCT									
		THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	
		66.3	29.3				68.8	37.4				70.7	46.5				72.0	56.1				72.7	65.8				
		SLOPE																									
		60 PCT				70 PCT				80 PCT				90 PCT				100 PCT									
		THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	
		66.3	29.3				68.8	37.4				70.7	46.5				72.0	56.1				72.7	65.8				
		SLOPE																									
		60 PCT				70 PCT				80 PCT				90 PCT				100 PCT									
		THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	
		66.3	29.3				68.8	37.4				70.7	46.5				72.0	56.1				72.7	65.8				
		SLOPE																									
		60 PCT				70 PCT				80 PCT				90 PCT				100 PCT									
		THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	
		66.3	29.3				68.8	37.4				70.7	46.5				72.0	56.1				72.7	65.8				
		SLOPE																									
		60 PCT				70 PCT				80 PCT				90 PCT				100 PCT									
		THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	
		66.3	29.3				68.8	37.4				70.7	46.5				72.0	56.1				72.7	65.8				
		SLOPE																									
		60 PCT				70 PCT				80 PCT				90 PCT				100 PCT									
		THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	
		66.3	29.3				68.8	37.4				70.7	46.5				72.0	56.1				72.7	65.8				
		SLOPE																									
		60 PCT				70 PCT				80 PCT				90 PCT				100 PCT									
		THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	
		66.3	29.3				68.8	37.4				70.7	46.5				72.0	56.1				72.7	65.8				
		SLOPE																									
		60 PCT				70 PCT				80 PCT				90 PCT				100 PCT									
		THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	
		66.3	29.3				68.8	37.4				70.7	46.5				72.0	56.1				72.7	65.8				
		SLOPE																									
		60 PCT				70 PCT				80 PCT				90 PCT				100 PCT									
		THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	
		66.3	29.3				68.8	37.4				70.7	46.5				72.0	56.1				72.7	65.8				
		SLOPE																									
		60 PCT				70 PCT				80 PCT				90 PCT				100 PCT									
		THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	
		66.3	29.3				68.8	37.4				70.7	46.5				72.0	56.1				72.7	65.8				
		SLOPE																									
		60 PCT				70 PCT				80 PCT				90 PCT				100 PCT									
		THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	
		66.3	29.3				68.8	37.4				70.7	46.5				72.0	56.1				72.7	65.8				
		SLOPE																									
		60 PCT				70 PCT				80 PCT				90 PCT				100 PCT									
		THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	
		66.3	29.3				68.8	37.4				70.7	46.5				72.0	56.1				72.7	65.8				
		SLOPE																									
		60 PCT				70 PCT				80 PCT				90 PCT				100 PCT									
		THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	
		66.3	29.3				68.8	37.4				70.7	46.5				72.0	56.1				72.7	65.8				
		SLOPE																									
		60 PCT				70 PCT				80 PCT				90 PCT				100 PCT									
		THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	
		66.3	29.3				68.8	37.4				70.7	46.5				72.0	56.1				72.7	65.8				

NOTE - FOR ASPECTS WITH WEST COMPONENTS, THE TIME AND SIGN OF SR AND SS ARE REVERSED.

LATITUDE 40.0 N
ASPECT SSE - SSW

	10 PCT				20 PCT				30 PCT				40 PCT				50 PCT				
	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	
JUN 22	-7.34	6.99	1016.1	-7.28	6.62	1003.4	-7.22	6.29	985.1	-7.17	6.01	961.9	-7.13	5.76	935.2	-7.09	5.73	936.3	-7.09	5.73	936.3
JUN 1 JUL 12	-7.26	6.90	1002.1	-7.21	6.55	993.7	-7.16	6.24	979.3	-7.13	5.97	959.8	-7.09	5.73	936.3	-7.04	5.68	937.0	-7.04	5.68	937.0
MAY 18 JUL 27	-7.11	6.76	977.0	-7.09	6.43	975.8	-7.07	6.15	968.2	-7.05	5.90	954.8	-6.90	5.60	934.8	-6.90	5.60	934.8	-6.90	5.60	934.8
MAY 3 AUG 10	-6.90	6.56	939.2	-6.90	6.27	947.9	-6.90	6.02	949.6	-6.86	5.87	921.1	-6.82	5.68	926.7	-6.82	5.62	926.1	-6.82	5.62	926.1
APR 19 AUG 25	-6.62	6.33	888.3	-6.62	6.09	908.5	-6.62	5.87	921.1	-6.62	5.87	921.1	-6.62	5.68	926.7	-6.62	5.62	926.1	-6.62	5.62	926.1
APR 4 SEP 9	-6.32	6.08	826.1	-6.32	5.86	858.2	-6.32	5.71	882.3	-6.32	5.71	882.3	-6.32	5.56	898.7	-6.32	5.42	908.2	-6.32	5.42	908.2
MAR 21 SEP 23	-6.00	5.82	753.7	-6.00	5.67	797.2	-6.00	5.54	832.5	-6.00	5.42	859.5	-6.00	5.32	878.9	-6.00	5.32	878.9	-6.00	5.32	878.9
MAR 7 OCT 8	-5.68	5.56	676.5	-5.68	5.46	729.9	-5.68	5.37	775.0	-5.68	5.29	811.6	-5.68	5.22	840.2	-5.68	5.22	840.2	-5.68	5.22	840.2
FEB 20 OCT 22	-5.38	5.31	600.1	-5.38	5.25	661.4	-5.38	5.20	714.4	-5.38	5.16	758.8	-5.38	5.12	795.0	-5.38	5.12	795.0	-5.38	5.12	795.0
FEB 7 NOV 5	-5.10	5.08	529.8	-5.10	5.07	596.6	-5.10	5.05	655.4	-5.10	5.04	705.8	-5.10	5.03	747.9	-5.10	5.03	747.9	-5.10	5.03	747.9
JAN 23 NOV 19	-4.86	4.86	472.2	-4.86	4.86	542.3	-4.86	4.86	604.9	-4.86	4.86	659.3	-4.86	4.86	705.4	-4.86	4.86	705.4	-4.86	4.86	705.4
JAN 10 DEC 3	-4.68	4.68	431.1	-4.68	4.68	503.0	-4.68	4.68	567.6	-4.68	4.68	624.2	-4.68	4.68	672.6	-4.68	4.68	672.6	-4.68	4.68	672.6
DEC 22	-4.57	4.57	407.0	-4.57	4.57	479.6	-4.57	4.57	545.1	-4.57	4.57	602.7	-4.57	4.57	652.3	-4.57	4.57	652.3	-4.57	4.57	652.3
	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	
	269.325	*5124	282.536	*5375	293.058	*5576	300.929	*5725	306.363	*5829	300.929	*5725	306.363	*5829	300.929	*5725	306.363	*5829	306.363	*5829	
	60 PCT				70 PCT				80 PCT				90 PCT				100 PCT				
	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	
JUN 22	-7.09	5.55	906.2	-7.05	5.35	876.1	-7.02	5.18	845.9	-7.00	5.02	816.3	-6.97	4.88	787.6	-6.98	4.88	800.0	-6.98	4.88	800.0
JUN 1 JUL 12	-7.06	5.52	910.3	-7.04	5.34	882.7	-7.02	5.17	854.7	-7.00	5.02	827.0	-6.99	5.02	844.1	-6.99	4.89	820.0	-6.99	4.89	820.0
MAY 18 JUL 27	-7.03	5.48	915.8	-7.01	5.31	892.6	-7.00	5.16	868.5	-6.99	5.02	844.1	-6.90	5.02	865.6	-6.90	4.90	845.7	-6.90	4.90	845.7
MAY 3 AUG 10	-6.90	5.43	920.8	-6.90	5.28	903.9	-6.90	5.14	885.2	-6.90	5.02	865.7	-6.82	5.01	885.7	-6.82	4.92	871.0	-6.82	4.92	871.0
APR 19 AUG 25	-6.62	5.37	920.5	-6.62	5.24	911.2	-6.62	5.12	899.3	-6.62	5.01	889.2	-6.62	5.01	899.2	-6.62	4.93	890.4	-6.62	4.93	890.4
APR 4 SEP 9	-6.32	5.30	911.8	-6.32	5.19	910.8	-6.32	5.10	906.3	-6.32	5.01	901.8	-6.32	5.01	901.8	-6.32	4.95	899.0	-6.32	4.95	899.0
MAR 21 SEP 23	-6.00	5.23	891.8	-6.00	5.15	899.1	-6.00	5.08	902.1	-6.00	5.01	901.8	-6.00	5.01	901.8	-6.00	4.95	899.0	-6.00	4.95	899.0
MAR 7 OCT 8	-5.68	5.16	861.5	-5.68	5.10	876.7	-5.68	5.05	886.8	-5.68	5.01	892.9	-5.68	4.97	895.9	-5.68	4.97	895.9	-5.68	4.97	895.9
FEB 20 OCT 22	-5.38	5.09	823.6	-5.38	5.06	845.5	-5.38	5.03	861.9	-5.38	5.01	873.7	-5.38	4.99	881.8	-5.38	4.99	881.8	-5.38	4.99	881.8
FEB 7 NOV 5	-5.10	5.03	782.1	-5.10	5.02	809.5	-5.10	5.01	830.9	-5.10	5.01	847.3	-5.10	5.00	859.8	-5.10	5.00	859.8	-5.10	5.00	859.8
JAN 23 NOV 19	-4.86	4.86	743.6	-4.86	4.86	774.8	-4.86	4.86	799.9	-4.86	4.86	819.7	-4.86	4.86	835.4	-4.86	4.86	835.4	-4.86	4.86	835.4
JAN 10 DEC 3	-4.68	4.68	713.2	-4.68	4.68	746.7	-4.68	4.68	773.9	-4.68	4.68	795.9	-4.68	4.68	813.5	-4.68	4.68	813.5	-4.68	4.68	813.5
DEC 22	-4.57	4.57	694.0	-4.57	4.57	728.6	-4.57	4.57	757.0	-4.57	4.57	780.0	-4.57	4.57	798.7	-4.57	4.57	798.7	-4.57	4.57	798.7
	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	
	305.680	*5892	311.265	*5922	311.485	*5926	310.681	*5911	309.123	*5881	310.681	*5911	309.123	*5881	310.681	*5911	309.123	*5881	309.123	*5881	

NOTE - FOR ASPECTS WITH WEST COMPONENTS, THE TIME AND SIGN OF SR AND SS ARE REVERSED.

LATITUDE 40 N
ASPECT NE - NW

		SLOPE																			
		10 PCT			20 PCT			30 PCT			40 PCT			50 PCT							
		THETA	ALPHA	LY	THETA	ALPHA	LY	THETA	ALPHA	LY	THETA	ALPHA	LY	THETA	ALPHA	LY	THETA	ALPHA	LY		
		43.9	5.6		47.4	11.8		50.5	18.6		52.9	25.8		54.8	33.3		54.8	33.3			
		SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY		
JUN 22		-7.43	7.28	1020.7	-7.43	7.10	1009.3	-7.43	6.88	989.9	-7.43	6.62	964.3	-7.43	6.32	934.5	-7.43	6.32	934.5		
JUN 1 JUL 12		-7.32	7.15	998.7	-7.32	6.95	984.3	-7.32	6.71	962.5	-7.32	6.43	935.0	-7.32	6.11	903.8	-7.32	6.11	903.8		
MAY 18 JUL 27		-7.14	6.94	960.4	-7.14	6.71	941.2	-7.14	6.44	915.4	-7.14	6.12	884.9	-7.14	5.77	851.7	-7.14	5.77	851.7		
MAY 3 AUG 10		-6.90	6.66	904.9	-6.90	6.39	879.4	-6.90	6.08	848.5	-6.90	5.72	814.2	-6.90	5.33	778.6	-6.90	5.33	778.6		
APR 19 AUG 25		-6.62	6.34	833.7	-6.62	6.02	801.1	-6.62	5.66	764.8	-6.62	5.26	726.7	-6.62	4.84	688.9	-6.62	4.84	688.9		
APR 4 SEP 9		-6.32	5.99	750.7	-6.32	5.62	711.2	-6.32	5.22	669.9	-6.32	4.78	628.7	-6.32	4.32	589.3	-6.32	4.32	589.3		
MAR 21 SEP 23		-6.00	5.63	659.1	-6.00	5.21	613.7	-6.00	4.76	568.4	-6.00	4.28	525.1	-6.00	3.78	485.3	-6.00	3.78	485.3		
MAR 7 OCT 8		-5.68	5.26	565.8	-5.68	4.80	515.8	-5.68	4.30	468.0	-5.68	3.78	423.9	-5.68	3.25	384.8	-5.68	3.25	384.8		
FEB 20 OCT 22		-5.38	4.91	477.3	-5.38	4.40	424.5	-5.38	3.86	375.7	-5.38	3.29	332.1	-5.38	2.72	294.7	-5.38	2.72	294.7		
FEB 7 NOV 5		-5.10	4.59	399.2	-5.10	4.03	345.2	-5.10	3.44	290.6	-5.10	2.83	254.6	-5.10	2.23	219.8	-5.10	2.23	219.8		
JAN 23 NOV 19		-4.86	4.31	337.2	-4.86	3.71	283.1	-4.86	3.08	235.7	-4.86	2.43	195.8	-4.86	1.79	163.7	-4.86	1.79	163.7		
JAN 10 DEC 3		-4.68	4.10	294.4	-4.68	3.47	240.8	-4.68	2.81	194.7	-4.68	2.13	156.8	-4.68	1.46	127.0	-4.68	1.46	127.0		
DEC 22		-4.57	3.98	269.8	-4.57	3.33	216.8	-4.57	2.64	171.6	-4.57	1.93	135.0	-4.57	1.24	106.8	-4.57	1.24	106.8		
		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.			
		240.266	4.571		226.163	4.303		212.023	4.034		198.416	3.775		185.789	3.535		185.789	3.535			
		56.1	40.7		56.8	47.9		57.2	54.6		57.2	60.7		56.9	66.2		56.9	66.2			
		SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY		
JUN 22		-7.43	5.97	902.6	-7.43	5.59	870.1	-7.43	5.19	838.5	-7.43	4.78	808.8	-7.43	4.37	781.2	-7.43	4.37	781.2		
JUN 1 JUL 12		-7.32	5.74	871.0	-7.32	5.35	838.2	-7.32	4.94	806.6	-7.32	4.53	777.1	-7.32	4.13	749.9	-7.32	4.13	749.9		
MAY 18 JUL 27		-7.14	5.38	817.7	-7.14	4.97	784.4	-7.14	4.56	752.9	-7.14	4.15	723.9	-7.14	3.75	697.5	-7.14	3.75	697.5		
MAY 3 AUG 10		-6.90	4.92	743.3	-6.90	4.49	709.7	-6.90	4.07	678.6	-6.90	3.66	650.6	-6.90	3.27	625.3	-6.90	3.27	625.3		
APR 19 AUG 25		-6.62	4.40	652.8	-6.62	3.95	619.3	-6.62	3.52	589.2	-6.62	3.11	562.5	-6.62	2.73	538.9	-6.62	2.73	538.9		
APR 4 SEP 9		-6.32	3.85	553.1	-6.32	3.39	520.5	-6.32	2.95	491.9	-6.32	2.54	467.2	-6.32	2.16	445.8	-6.32	2.16	445.8		
MAR 21 SEP 23		-6.00	3.29	449.8	-6.00	2.81	418.9	-6.00	2.36	392.6	-6.00	1.95	370.4	-6.00	1.59	351.5	-6.00	1.59	351.5		
MAR 7 OCT 8		-5.68	2.72	351.1	-5.68	2.23	322.7	-5.68	1.77	299.2	-5.68	1.37	279.9	-5.68	1.01	263.9	-5.68	1.01	263.9		
FEB 20 OCT 22		-5.38	2.18	263.7	-5.38	1.66	238.5	-5.38	1.20	218.0	-5.38	.79	201.7	-5.38	.44	188.6	-5.38	.44	188.6		
FEB 7 NOV 5		-5.10	1.65	191.8	-5.10	1.12	169.7	-5.10	.65	152.6	-5.10	.25	139.4	-5.10	.10	128.9	-5.10	.10	128.9		
JAN 23 NOV 19		-4.86	1.19	138.7	-4.86	.64	119.8	-4.86	.16	105.5	-4.86	-.24	94.9	-4.86	-.58	86.7	-4.86	-.58	86.7		
JAN 10 DEC 3		-4.68	.83	104.5	-4.68	.27	88.0	-4.68	-.22	75.9	-4.68	-.62	67.2	-4.68	-.96	60.7	-4.68	-.96	60.7		
DEC 22		-4.57	.60	86.0	-4.57	.03	70.9	-4.57	-.46	60.2	-4.57	-.87	52.7	-4.57	-1.20	47.1	-4.57	-1.20	47.1		
		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.			
		240.266	4.571		226.163	4.303		212.023	4.034		198.416	3.775		185.789	3.535		185.789	3.535			

NOTE - FOR ASPECTS WITH WEST COMPONENTS, THE TIME AND SIGN OF SR AND SS ARE REVERSED.

LATITUDE 40 N
ASPECT SE - SW

	10 PCT						20 PCT						30 PCT						40 PCT						50 PCT					
	SLOPE			SLOPE			SLOPE			SLOPE			SLOPE			SLOPE			SLOPE			SLOPE			SLOPE			SLOPE		
	THETA	ALPHA	LY	SR	SS	LY	THETA	ALPHA	LY	SR	SS	LY	THETA	ALPHA	LY	SR	SS	LY	THETA	ALPHA	LY	SR	SS	LY	THETA	ALPHA	LY	SR	SS	LY
JUN 22	-7.43	6.89	1017.9	-7.43	6.41	1008.8	-7.43	5.99	995.5	-7.43	5.57	982.4	-7.43	5.12	803.5	-6.00	5.12	803.5	-6.00	4.69	839.8	-6.00	4.27	766.7	-5.68	4.56	788.4	-5.68	4.11	845.2
JUN 1 JUL 12	-7.32	6.80	1002.8	-7.32	6.33	997.1	-7.32	5.92	987.0	-7.32	5.48	972.9	-7.32	5.05	732.5	-5.38	4.73	705.4	-5.38	4.32	677.0	-5.38	3.97	827.3	-5.38	3.94	793.3	-5.38	3.52	851.3
MAY 18 JUL 27	-7.14	6.65	976.0	-7.14	6.21	976.0	-7.14	5.82	971.1	-7.14	5.38	957.0	-7.14	4.95	608.1	-5.10	4.56	608.1	-5.10	4.15	645.9	-5.10	3.74	747.1	-4.86	4.09	860.1	-4.86	3.67	914.6
MAY 3 AUG 10	-6.90	6.44	935.9	-6.90	6.03	943.4	-6.90	5.67	945.7	-6.90	5.25	909.1	-6.90	4.82	557.6	-4.68	4.42	557.6	-4.68	4.01	593.0	-4.68	3.59	708.9	-4.46	3.95	819.0	-4.46	3.53	884.2
APR 19 AUG 25	-6.62	6.20	882.2	-6.62	5.83	898.5	-6.62	5.40	909.1	-6.62	4.98	875.1	-6.62	4.56	515.7	-4.46	4.15	515.7	-4.46	3.74	557.6	-4.46	3.32	660.9	-4.24	3.68	779.3	-4.24	3.26	845.2
APR 4 SEP 9	-6.32	5.94	817.1	-6.32	5.61	842.4	-6.32	5.19	861.7	-6.32	4.77	838.5	-6.32	4.35	482.5	-4.24	3.93	482.5	-4.24	3.51	524.7	-4.24	3.09	629.9	-4.02	3.47	748.4	-4.02	3.05	819.0
MAR 21 SEP 23	-6.00	5.67	742.0	-6.00	5.37	775.9	-6.00	5.00	803.5	-6.00	4.68	824.7	-6.00	4.27	535.1	-4.57	3.85	535.1	-4.57	3.43	571.3	-4.57	3.01	673.1	-4.35	3.39	792.3	-4.35	2.97	860.5
MAR 7 OCT 8	-5.68	5.40	662.4	-5.68	5.14	703.7	-5.68	4.82	738.5	-5.68	4.46	766.7	-5.68	4.10	482.5	-4.57	3.68	482.5	-4.57	3.26	524.7	-4.57	2.84	629.9	-4.35	3.22	748.4	-4.35	2.80	819.0
FEB 20 OCT 22	-5.38	5.13	584.2	-5.38	4.92	631.2	-5.38	4.56	671.7	-5.38	4.20	705.4	-5.38	3.84	427.1	-4.24	3.42	427.1	-4.24	3.00	468.1	-4.24	2.58	571.3	-4.02	2.96	692.3	-4.02	2.54	766.7
FEB 7 NOV 5	-5.10	4.89	512.6	-5.10	4.72	563.5	-5.10	4.35	608.1	-5.10	3.93	645.9	-5.10	3.51	393.0	-4.02	3.09	393.0	-4.02	2.67	438.5	-4.02	2.25	543.4	-3.80	2.65	660.9	-3.80	2.23	732.5
JAN 23 NOV 19	-4.86	4.69	454.2	-4.86	4.54	507.4	-4.86	4.18	557.6	-4.86	3.82	608.1	-4.86	3.46	357.6	-4.24	3.04	357.6	-4.24	2.62	403.4	-4.24	2.20	508.8	-4.02	2.58	629.9	-4.02	2.16	708.9
JAN 10 DEC 3	-4.68	4.54	412.8	-4.68	4.42	467.2	-4.68	4.06	515.7	-4.68	3.68	567.0	-4.68	3.32	315.7	-4.02	2.90	315.7	-4.02	2.48	363.0	-4.02	2.06	468.1	-3.80	2.46	588.5	-3.80	2.04	673.1
DEC 22	-4.57	4.45	388.5	-4.57	4.34	443.4	-4.57	3.96	495.7	-4.57	3.58	547.0	-4.57	3.22	295.7	-3.80	2.80	295.7	-3.80	2.38	343.4	-3.80	1.96	448.6	-3.58	2.36	568.1	-3.58	1.94	692.3
JUN 22	-7.43	4.99	936.8	-7.43	4.73	913.8	-7.43	4.47	890.5	-7.43	4.21	867.6	-7.43	3.95	845.2	-7.43	3.69	822.3	-7.43	3.43	800.0	-7.43	3.17	777.7	-7.43	2.91	755.0	-7.43	2.65	732.5
JUN 1 JUL 12	-7.32	4.96	936.2	-7.32	4.70	915.3	-7.32	4.44	897.6	-7.32	4.18	875.1	-7.32	3.92	852.7	-7.32	3.66	830.3	-7.32	3.40	807.8	-7.32	3.14	785.3	-7.32	2.88	762.8	-7.32	2.62	740.3
MAY 18 JUL 27	-7.14	4.90	933.5	-7.14	4.66	916.0	-7.14	4.42	894.3	-7.14	4.16	871.8	-7.14	3.90	849.3	-7.14	3.64	826.8	-7.14	3.38	804.3	-7.14	3.12	781.8	-7.14	2.86	759.3	-7.14	2.60	736.8
MAY 3 AUG 10	-6.90	4.82	926.1	-6.90	4.60	913.5	-6.90	4.38	891.3	-6.90	4.12	868.8	-6.90	3.86	845.8	-6.90	3.60	823.3	-6.90	3.34	800.8	-6.90	3.08	778.3	-6.90	2.82	755.8	-6.90	2.56	733.3
APR 19 AUG 25	-6.62	4.73	910.9	-6.62	4.53	904.0	-6.62	4.31	881.5	-6.62	4.05	858.0	-6.62	3.79	835.5	-6.62	3.53	813.0	-6.62	3.27	790.5	-6.62	3.01	766.0	-6.62	2.75	743.0	-6.62	2.49	719.0
APR 4 SEP 9	-6.32	4.63	885.9	-6.32	4.45	885.2	-6.32	4.27	862.8	-6.32	4.09	840.3	-6.32	3.91	817.8	-6.32	3.73	795.3	-6.32	3.55	772.8	-6.32	3.37	750.3	-6.32	3.20	727.8	-6.32	2.92	704.8
MAR 21 SEP 23	-6.00	4.52	849.6	-6.00	4.36	855.0	-6.00	4.20	832.3	-6.00	4.04	809.8	-6.00	3.88	787.3	-6.00	3.72	764.8	-6.00	3.56	742.3	-6.00	3.40	719.8	-6.00	3.24	697.3	-6.00	3.08	674.8
MAR 7 OCT 8	-5.68	4.41	804.3	-5.68	4.28	815.3	-5.68	4.16	822.3	-5.68	4.00	800.0	-5.68	3.84	777.7	-5.68	3.68	755.2	-5.68	3.52	732.7	-5.68	3.36	710.2	-5.68	3.20	687.7	-5.68	3.04	665.2
FEB 20 OCT 22	-5.38	4.31	753.5	-5.38	4.20	769.3	-5.38	4.10	780.6	-5.38	4.00	791.9	-5.38	3.90	803.2	-5.38	3.80	814.5	-5.38	3.70	825.8	-5.38	3.60	837.1	-5.38	3.50	848.4	-5.38	3.40	859.7
FEB 7 NOV 5	-5.10	4.22	701.9	-5.10	4.13	721.4	-5.10	4.05	736.2	-5.10	4.00	751.7	-5.10	3.95	767.2	-5.10	3.90	782.7	-5.10	3.85	798.2	-5.10	3.80	813.7	-5.10	3.75	829.2	-5.10	3.70	844.7
JAN 23 NOV 19	-4.86	4.14	656.4	-4.86	4.07	678.4	-4.86	4.00	695.7	-4.86	3.95	718.2	-4.86	3.90	736.5	-4.86	3.85	754.8	-4.86	3.80	773.1	-4.86	3.75	791.4	-4.86	3.70	809.7	-4.86	3.65	828.0
JAN 10 DEC 3	-4.68	4.08	622.2	-4.68	4.02	645.8	-4.68	3.97	664.6	-4.68	3.92	683.4	-4.68	3.87	702.2	-4.68	3.82	721.0	-4.68	3.77	739.8	-4.68	3.72	758.6	-4.68	3.67	777.4	-4.68	3.62	796.2
DEC 22	-4.57	4.05	601.3	-4.57	4.00	625.7	-4.57	3.95	645.3	-4.57	3.90	664.9	-4.57	3.85	684.5	-4.57	3.80	704.1	-4.57	3.75	723.7	-4.57	3.70	743.3	-4.57	3.65	762.9	-4.57	3.60	782.5

NOTE - FOR ASPECTS WITH WEST COMPONENTS, THE TIME AND SIGN OF SR AND SS ARE REVERSED.

		SLOPE				20 PCT				30 PCT				40 PCT				50 PCT			
		10 PCT		THETA		ALPHA		LY		SR		SS		LY		SR		SS		LY	
		THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA
		42.0	7.1	43.5	14.5	44.4	21.8	44.9	29.0	44.9	35.7	44.9	41.4	41.4	41.4	41.4	41.4	41.4	41.4	41.4	41.4
		SR	SS	SR	SS	SR	SS	SR	SS	SR	SS	SR	SS	SR	SS	SR	SS	SR	SS	SR	SS
JUN 22		-7.43	7.06	1020.4	-7.43	6.66	1011.1	-7.43	6.23	996.2	-7.43	5.78	977.4	-7.43	5.33	956.3	-7.43	5.33	956.3	-7.43	5.33
JUN 1 JUL 12		-7.32	6.94	1000.1	-7.32	6.53	989.5	-7.32	6.10	973.7	-7.32	5.65	954.4	-7.32	5.20	933.1	-7.32	5.20	933.1	-7.32	5.20
MAY 18 JUL 27		-7.14	6.75	964.6	-7.14	6.33	951.9	-7.14	5.89	934.7	-7.14	5.44	914.6	-7.14	4.99	893.1	-7.14	4.99	893.1	-7.14	4.99
MAY 3 AUG 10		-6.90	6.49	912.8	-6.90	6.06	897.2	-6.90	5.60	878.3	-6.90	5.14	857.3	-6.90	4.70	835.6	-6.90	4.70	835.6	-6.90	4.70
APR 19 AUG 25		-6.62	6.19	845.7	-6.62	5.74	827.1	-6.62	5.27	806.3	-6.62	4.81	784.6	-6.62	4.36	762.9	-6.62	4.36	762.9	-6.62	4.36
APR 4 SEP 9		-6.32	5.87	766.9	-6.32	5.39	745.4	-6.32	4.92	723.0	-6.32	4.44	700.7	-6.32	4.00	679.3	-6.32	4.00	679.3	-6.32	4.00
MAR 21 SEP 23		-6.00	5.53	679.2	-6.00	5.04	655.2	-6.00	4.55	631.5	-6.00	4.07	609.1	-6.00	3.62	588.5	-6.00	3.62	588.5	-6.00	3.62
MAR 7 OCT 8		-5.68	5.19	589.0	-5.68	4.68	563.2	-5.68	4.18	538.9	-5.68	3.69	516.9	-5.68	3.24	497.3	-5.68	3.24	497.3	-5.68	3.24
FEB 20 OCT 22		-5.38	4.86	502.9	-5.38	4.33	473.9	-5.38	3.82	451.7	-5.38	3.33	430.5	-5.38	2.88	412.2	-5.38	2.88	412.2	-5.38	2.88
FEB 7 NOV 5		-5.10	4.56	426.2	-5.10	4.01	398.9	-5.10	3.49	375.1	-5.10	2.99	354.9	-5.10	2.54	338.1	-5.10	2.54	338.1	-5.10	2.54
JAN 23 NOV 19		-4.86	4.30	364.9	-4.86	3.74	337.7	-4.86	3.20	314.7	-4.86	2.67	295.6	-4.86	2.26	280.2	-4.86	2.26	280.2	-4.86	2.26
JAN 10 DEC 3		-4.68	4.11	322.4	-4.68	3.54	295.5	-4.68	2.99	273.2	-4.68	2.49	255.1	-4.68	2.04	240.6	-4.68	2.04	240.6	-4.68	2.04
DEC 22		-4.57	3.99	297.8	-4.57	3.41	271.2	-4.57	2.86	249.4	-4.57	2.36	231.9	-4.57	1.91	218.1	-4.57	1.91	218.1	-4.57	1.91
		YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.
		246.405	.4688	238.771	.4543	231.110	.4397	223.686	.4256	216.690	.4123										
60 PCT		THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA
		44.6	41.9	44.0	47.5	43.2	52.4	42.4	56.8	42.4	60.6	42.4	64.0	42.4	67.4	42.4	70.8	42.4	74.2	42.4	77.6
		SR	SS	SR	SS	SR	SS	SR	SS	SR	SS	SR	SS	SR	SS	SR	SS	SR	SS	SR	SS
JUN 22		-7.43	4.90	934.2	-7.43	4.49	912.2	-7.43	4.12	890.9	-7.43	3.77	870.8	-7.43	3.46	851.9	-7.43	3.46	851.9	-7.43	3.46
JUN 1 JUL 12		-7.32	4.77	911.1	-7.32	4.36	889.3	-7.32	3.99	868.4	-7.32	3.65	848.6	-7.32	3.35	830.1	-7.32	3.35	830.1	-7.32	3.35
MAY 18 JUL 27		-7.14	4.56	871.2	-7.14	4.16	849.9	-7.14	3.79	829.5	-7.14	3.46	810.5	-7.14	3.16	792.7	-7.14	3.16	792.7	-7.14	3.16
MAY 3 AUG 10		-6.90	4.27	814.1	-6.90	3.88	793.5	-6.90	3.52	774.0	-6.90	3.20	756.0	-6.90	2.91	739.3	-6.90	2.91	739.3	-6.90	2.91
APR 19 AUG 25		-6.62	3.94	742.0	-6.62	3.55	722.3	-6.62	3.20	704.1	-6.62	2.89	687.4	-6.62	2.61	672.0	-6.62	2.61	672.0	-6.62	2.61
APR 4 SEP 9		-6.32	3.58	659.3	-6.32	3.20	640.9	-6.32	2.86	624.2	-6.32	2.56	609.4	-6.32	2.29	595.2	-6.32	2.29	595.2	-6.32	2.29
MAR 21 SEP 23		-6.00	3.21	569.7	-6.00	2.84	552.9	-6.00	2.51	537.8	-6.00	2.22	524.4	-6.00	1.96	512.4	-6.00	1.96	512.4	-6.00	1.96
MAR 7 OCT 8		-5.68	2.84	480.0	-5.68	2.47	464.9	-5.68	2.15	451.7	-5.68	1.87	440.1	-5.68	1.63	429.8	-5.68	1.63	429.8	-5.68	1.63
FEB 20 OCT 22		-5.38	2.48	396.6	-5.38	2.12	383.2	-5.38	1.81	371.8	-5.38	1.54	362.0	-5.38	1.30	353.3	-5.38	1.30	353.3	-5.38	1.30
FEB 7 NOV 5		-5.10	2.14	324.1	-5.10	1.79	312.4	-5.10	1.49	302.7	-5.10	1.23	294.4	-5.10	1.01	287.2	-5.10	1.01	287.2	-5.10	1.01
JAN 23 NOV 19		-4.86	1.86	267.6	-4.86	1.52	257.4	-4.86	1.22	248.9	-4.86	.97	241.9	-4.86	.76	235.9	-4.86	.76	235.9	-4.86	.76
JAN 10 DEC 3		-4.68	1.65	229.1	-4.68	1.31	219.9	-4.68	1.02	212.5	-4.68	.78	206.3	-4.68	.57	201.1	-4.68	.57	201.1	-4.68	.57
DEC 22		-4.57	1.52	207.3	-4.57	1.18	198.7	-4.57	.90	191.8	-4.57	.66	186.1	-4.57	.45	181.4	-4.57	.45	181.4	-4.57	.45
		YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.
		210.224	.4000	204.311	.3887	198.952	.3785	194.114	.3693												

NOTE - FOR ASPECTS WITH WEST COMPONENTS THE TIME AND SIGN OF SR AND SS ARE REVERSED.

LATITUDE 40 N
ASPECT ESE - WSW

		10 PCT				20 PCT				SLOPE				30 PCT				40 PCT				50 PCT					
		THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	
JUN 22		-7.43	6.86	1019.4			-7.43	6.33	1012.5			-7.43	5.84	1002.4			-7.43	5.39	989.4			-7.43	5.00	974.2			
JUN 1 JUL 12		-7.32	6.76	1002.8			-7.32	6.24	997.9			-7.32	5.76	989.7			-7.32	5.33	978.6			-7.32	4.94	965.1			
MAY 18 JUL 27		-7.14	6.60	973.4			-7.14	6.09	971.9			-7.14	5.63	967.0			-7.14	5.21	958.9			-7.14	4.84	948.3			
MAY 3 AUG 10		-6.90	6.38	929.8			-6.90	5.90	932.8			-6.90	5.45	932.2			-6.90	5.05	928.4			-6.90	4.70	921.7			
APR 19 AUG 25		-6.62	6.13	872.1			-6.62	5.66	880.3			-6.62	5.25	884.9			-6.62	4.87	885.9			-6.62	4.53	883.8			
APR 4 SEP 9		-6.32	5.85	802.9			-6.32	5.41	816.4			-6.32	5.02	826.2			-6.32	4.67	832.4			-6.32	4.36	835.0			
MAR 21 SEP 23		-6.00	5.56	724.0			-6.00	5.15	742.5			-6.00	4.78	757.3			-6.00	4.46	768.3			-6.00	4.17	775.5			
MAR 7 OCT 8		-5.68	5.26	641.1			-5.68	4.88	663.9			-5.68	4.55	683.1			-5.68	4.25	698.3			-5.68	3.98	709.6			
FEB 20 OCT 22		-5.38	4.99	560.4			-5.38	4.63	585.5			-5.38	4.32	609.0			-5.38	4.04	627.6			-5.38	3.80	642.2			
FEB 7 NOV 5		-5.10	4.73	487.2			-5.10	4.40	515.4			-5.10	4.11	540.3			-5.10	3.86	561.3			-5.10	3.64	578.3			
JAN 23 NOV 19		-4.86	4.51	427.8			-4.86	4.20	457.3			-4.86	3.93	483.6			-4.86	3.70	506.0			-4.86	3.50	524.6			
JAN 10 DEC 3		-4.68	4.35	385.9			-4.68	4.06	415.1			-4.68	3.81	443.1			-4.68	3.59	466.3			-4.68	3.40	485.7			
DEC 22		-4.57	4.25	361.5			-4.57	3.97	391.9			-4.57	3.73	419.2			-4.57	3.52	442.8			-4.57	3.34	462.6			
		YEAR	R.i.e.	YEAR	R.i.e.	YEAR	R.i.e.	YEAR	R.i.e.	YEAR	R.i.e.	YEAR	R.i.e.	YEAR	R.i.e.	YEAR	R.i.e.	YEAR	R.i.e.	YEAR	R.i.e.	YEAR	R.i.e.	YEAR	R.i.e.	YEAR	R.i.e.
		260.159	4.950	265.595	5.053	269.781	5.133	272.669	5.188	274.328	5.219																
		60 PCT				70 PCT				SLOPE				80 PCT				90 PCT				100 PCT					
		THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	
JUN 22		-7.43	4.65	957.4			-7.43	4.33	939.7			-7.43	4.06	921.7			-7.43	3.82	903.8			-7.43	3.60	886.3			
JUN 1 JUL 12		-7.32	4.59	949.9			-7.32	4.29	933.6			-7.32	4.02	916.8			-7.32	3.78	900.1			-7.32	3.57	893.5			
MAY 18 JUL 27		-7.14	4.50	925.7			-7.14	4.21	921.8			-7.14	3.95	907.1			-7.14	3.72	892.1			-7.14	3.52	877.1			
MAY 3 AUG 10		-6.90	4.38	912.6			-6.90	4.10	901.9			-6.90	3.86	890.1			-6.90	3.64	877.7			-6.90	3.45	864.9			
APR 19 AUG 25		-6.62	4.24	878.9			-6.62	3.98	872.0			-6.62	3.75	863.6			-6.62	3.54	854.2			-6.62	3.36	844.2			
APR 4 SEP 9		-6.32	4.08	834.6			-6.32	3.84	831.7			-6.32	3.63	826.9			-6.32	3.44	820.8			-6.32	3.27	813.7			
MAR 21 SEP 23		-6.00	3.92	779.4			-6.00	3.69	780.5			-6.00	3.50	779.4			-6.00	3.33	776.5			-6.00	3.17	772.5			
MAR 7 OCT 8		-5.68	3.75	717.4			-5.68	3.55	722.1			-5.68	3.37	724.2			-5.68	3.22	724.4			-5.68	3.08	723.1			
FEB 20 OCT 22		-5.38	3.59	653.1			-5.38	3.41	660.7			-5.38	3.25	665.7			-5.38	3.11	668.4			-5.38	2.99	669.5			
FEB 7 NOV 5		-5.10	3.45	591.5			-5.10	3.28	601.4			-5.10	3.14	608.5			-5.10	3.01	613.3			-5.10	2.90	616.3			
JAN 23 NOV 19		-4.86	3.33	539.4			-4.86	3.18	550.9			-4.86	3.05	559.4			-4.86	2.93	565.7			-4.86	2.83	570.0			
JAN 10 DEC 3		-4.68	3.24	501.4			-4.68	3.10	513.8			-4.68	2.98	523.3			-4.68	2.87	530.4			-4.68	2.78	535.6			
DEC 22		-4.57	3.19	478.8			-4.57	3.05	491.6			-4.57	2.94	501.6			-4.57	2.84	509.1			-4.57	2.75	514.7			
		YEAR	R.i.e.	YEAR	R.i.e.	YEAR	R.i.e.	YEAR	R.i.e.	YEAR	R.i.e.	YEAR	R.i.e.	YEAR	R.i.e.	YEAR	R.i.e.	YEAR	R.i.e.	YEAR	R.i.e.	YEAR	R.i.e.	YEAR	R.i.e.	YEAR	R.i.e.
		274.901	5.230	274.579	5.224	273.562	5.205	272.035	5.176	270.141	5.140																

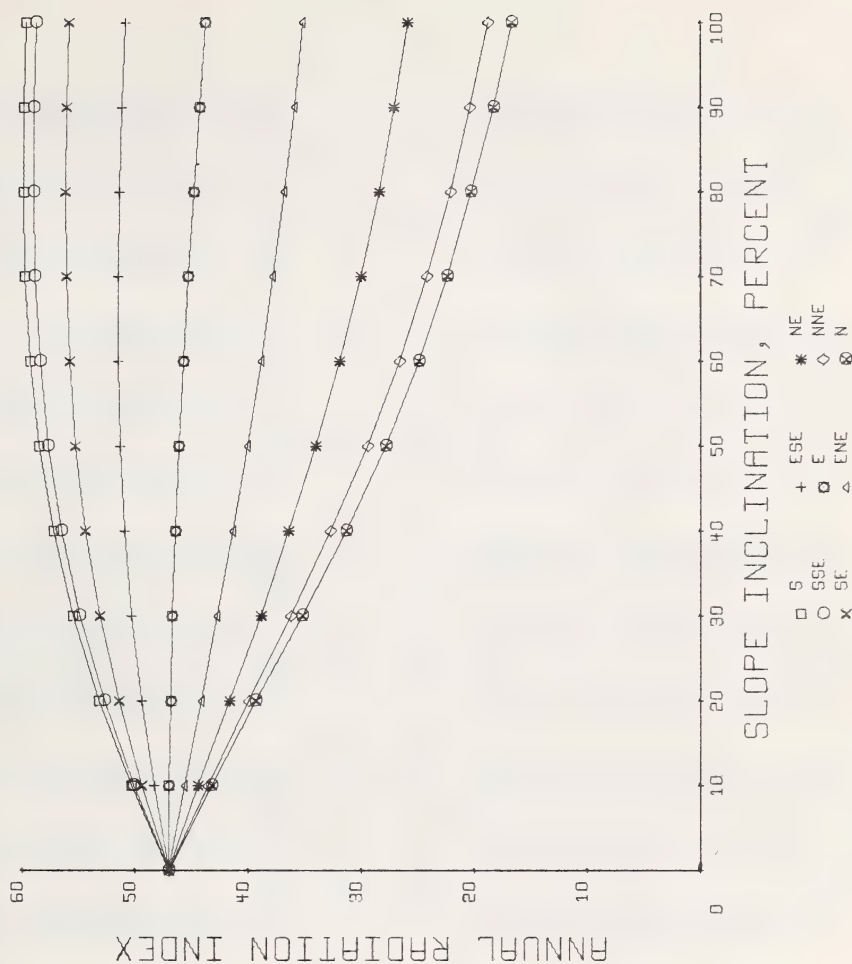
NOTE - FOR ASPECTS WITH WEST COMPONENTS, THE TIME AND SIGN OF SR AND SS ARE REVERSED.

LATITUDE 40 N
ASPECT E - W

		10 PCT				20 PCT				SLOPE				30 PCT				40 PCT				50 PCT			
		THETA		ALPHA		THETA		ALPHA		THETA		ALPHA		THETA		ALPHA		THETA		ALPHA		THETA		ALPHA	
		SR	SS	LY	R.I.	SR	SS	LY	R.I.	SR	SS	LY	R.I.	SR	SS	LY	R.I.	SR	SS	LY	R.I.	SR	SS	LY	R.I.
JUN 22		-7.43	6.92	1020.2	-7.43	6.40	1013.1	-7.43	5.90	1002.3	-7.43	5.42	988.7	-7.43	4.98	973.4	-7.43	4.54	958.1	-7.43	4.10	942.8	-7.43	3.66	927.5
JUN 1	JUL 12	-7.32	6.81	1001.8	-7.32	6.30	995.0	-7.32	5.80	984.8	-7.32	5.33	972.0	-7.32	4.89	957.4	-7.32	4.45	942.1	-7.32	4.01	926.8	-7.32	3.57	911.5
MAY 18	JUL 27	-7.14	6.64	969.4	-7.14	6.13	963.3	-7.14	5.63	954.1	-7.14	5.17	942.5	-7.14	4.74	929.2	-7.14	4.30	913.9	-7.14	3.86	898.6	-7.14	3.42	883.3
MAY 3	AUG 10	-6.90	6.40	921.7	-6.90	5.90	916.6	-6.90	5.41	908.7	-6.90	4.96	898.8	-6.90	4.54	887.3	-6.90	4.10	871.9	-6.90	3.66	856.6	-6.90	3.22	841.3
APR 19	AUG 25	-6.62	6.12	859.3	-6.62	5.62	855.3	-6.62	5.15	849.2	-6.62	4.71	841.2	-6.62	4.30	831.9	-6.62	3.86	816.6	-6.62	3.42	801.3	-6.62	2.98	786.0
APR 4	SEP 9	-6.32	5.82	785.3	-6.32	5.33	782.6	-6.32	4.87	778.1	-6.32	4.44	772.3	-6.32	4.01	765.3	-6.32	3.57	750.0	-6.32	3.13	734.7	-6.32	2.69	719.4
MAR 21	SEP 23	-6.00	5.50	702.0	-6.00	5.02	700.4	-6.00	4.57	697.8	-6.00	4.16	694.1	-6.00	3.79	689.4	-6.00	3.35	684.1	-6.00	2.91	678.8	-6.00	2.47	673.5
MAR 7	OCT 8	-5.68	5.19	615.5	-5.68	4.72	615.0	-5.68	4.28	614.0	-5.68	3.88	612.3	-5.68	3.53	609.7	-5.68	3.13	604.4	-5.68	2.69	600.0	-5.68	2.25	594.7
FEB 20	OCT 22	-5.38	4.89	532.0	-5.38	4.42	532.5	-5.38	4.00	532.9	-5.38	3.61	532.8	-5.38	3.27	532.1	-5.38	2.87	531.4	-5.38	2.47	530.7	-5.38	2.03	525.4
FEB 7	NOV 5	-5.10	4.61	457.0	-5.10	4.15	458.2	-5.10	3.74	459.7	-5.10	3.36	460.9	-5.10	3.04	461.6	-5.10	2.64	462.9	-5.10	2.24	464.2	-5.10	1.80	458.9
JAN 23	NOV 19	-4.86	4.37	396.6	-4.86	3.92	398.4	-4.86	3.51	400.6	-4.86	3.15	402.7	-4.86	2.84	404.4	-4.86	2.44	406.6	-4.86	2.04	408.8	-4.86	1.60	403.5
JAN 10	DEC 3	-4.68	4.20	354.4	-4.68	3.75	356.4	-4.68	3.35	359.1	-4.68	3.00	361.8	-4.68	2.69	364.1	-4.68	2.29	366.4	-4.68	1.89	368.7	-4.68	1.45	363.4
DEC 22		-4.57	4.09	329.8	-4.57	3.65	332.1	-4.57	3.25	335.0	-4.57	2.90	338.0	-4.57	2.61	340.6	-4.57	2.21	343.1	-4.57	1.81	345.7	-4.57	1.37	340.4
JUN 22		-7.43	4.57	956.9	-7.43	4.21	940.0	-7.43	3.89	923.1	-7.43	3.61	906.6	-7.43	3.35	890.6	-7.43	3.09	874.6	-7.43	2.83	858.6	-7.43	2.57	842.6
JUN 1	JUL 12	-7.32	4.49	941.8	-7.32	4.14	925.6	-7.32	3.82	909.4	-7.32	3.54	893.6	-7.32	3.29	878.2	-7.32	3.03	862.2	-7.32	2.77	846.2	-7.32	2.51	830.2
MAY 18	JUL 27	-7.14	4.36	914.9	-7.14	4.01	900.0	-7.14	3.70	885.1	-7.14	3.43	870.4	-7.14	3.18	856.1	-7.14	2.92	840.1	-7.14	2.66	824.1	-7.14	2.40	808.1
MAY 3	AUG 10	-6.90	4.17	874.8	-6.90	3.83	861.7	-6.90	3.54	848.5	-6.90	3.28	835.4	-6.90	3.04	822.6	-6.90	2.78	808.6	-6.90	2.52	794.6	-6.90	2.26	778.6
APR 19	AUG 25	-6.62	3.95	821.5	-6.62	3.63	810.6	-6.62	3.35	799.5	-6.62	3.10	788.3	-6.62	2.87	777.2	-6.62	2.61	766.1	-6.62	2.35	755.0	-6.62	2.09	739.0
APR 4	SEP 9	-6.32	3.71	757.3	-6.32	3.40	748.8	-6.32	3.14	739.8	-6.32	2.90	730.7	-6.32	2.69	721.6	-6.32	2.43	712.5	-6.32	2.17	703.4	-6.32	1.91	697.4
MAR 21	SEP 23	-6.00	3.46	683.8	-6.00	3.17	677.6	-6.00	2.92	670.9	-6.00	2.69	663.9	-6.00	2.50	656.8	-6.00	2.24	649.8	-6.00	2.00	642.8	-6.00	1.74	636.8
MAR 7	OCT 8	-5.68	3.21	606.4	-5.68	2.94	602.3	-5.68	2.70	597.7	-5.68	2.49	592.8	-5.68	2.30	587.5	-5.68	2.04	582.6	-5.68	1.78	577.7	-5.68	1.52	572.7
FEB 20	OCT 22	-5.38	2.97	530.6	-5.38	2.71	528.4	-5.38	2.49	525.6	-5.38	2.29	522.4	-5.38	2.12	518.8	-5.38	1.86	515.2	-5.38	1.60	511.6	-5.38	1.34	507.6
FEB 7	NOV 5	-5.10	2.75	461.6	-5.10	2.51	460.9	-5.10	2.30	459.6	-5.10	2.11	457.8	-5.10	1.95	455.5	-5.10	1.79	453.2	-5.10	1.63	450.9	-5.10	1.37	446.9
JAN 23	NOV 19	-4.86	2.57	405.4	-4.86	2.33	405.8	-4.86	2.13	405.5	-4.86	1.96	404.7	-4.86	1.81	403.5	-4.86	1.65	402.3	-4.86	1.49	401.1	-4.86	1.23	397.1
JAN 10	DEC 3	-4.68	2.43	365.8	-4.68	2.21	366.8	-4.68	2.01	367.2	-4.68	1.85	367.0	-4.68	1.71	366.4	-4.68	1.55	365.2	-4.68	1.39	364.0	-4.68	1.13	360.0
DEC 22		-4.57	2.35	342.7	-4.57	2.13	344.0	-4.57	1.94	344.8	-4.57	1.78	344.9	-4.57	1.64	344.6	-4.57	1.48	344.3	-4.57	1.32	344.0	-4.57	1.06	340.0

NOTE - FOR ASPECTS WITH WEST COMPONENTS, THE TIME AND SIGN OF SR AND SS ARE REVERSED.

RADIATION INDEXES FOR VARIOUS FACETS AT LATITUDE 42 N



HORIZONTAL SURFACE

LATITUDE 42 N

	SR	SS	LY
JUN 22	-7.54	7.54	1023.7
JUN 1 JUL 12	-7.42	7.42	1003.4
MAY 18 JUL 27	-7.23	7.23	967.8
MAY 3 AUG 10	-6.97	6.97	915.8
APR 19 AUG 25	-6.67	6.67	848.6
APR 4 SEP 9	-6.34	6.34	769.5
MAR 21 SEP 23	-6.00	6.00	681.5
MAR 7 OCT 8	-5.66	5.66	591.1
FEB 20 OCT 22	-5.33	5.33	504.6
FEB 7 NOV 5	-5.03	5.03	427.6
JAN 23 NOV 19	-4.77	4.77	366.1
JAN 10 DEC 3	-4.58	4.58	323.4
DEC 22	-4.46	4.46	298.7

YEAR R.I.
247.228 .4704

LATITUDE 42 N
ASPECT N -

		10 PCT				20 PCT				30 PCT				40 PCT				50 PCT			
		THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY
		47.7	0.0	53.3	58.7	0.0	7.54	7.54	1007.3	7.54	985.7	7.54	957.1	7.54	63.8	0.0	957.1	68.6	0.0	7.54	923.6
		YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.
JUN 22		-7.54	7.54	1020.4	-7.54	7.54	1007.3	-7.54	7.54	985.7	7.54	957.1	7.54	957.1	-7.54	7.54	957.1	-7.54	7.54	957.1	7.54
JUN 1 JUL 12		-7.42	7.42	995.0	-7.42	7.42	977.2	-7.42	7.42	951.3	7.42	925.6	7.42	919.0	-7.42	7.42	919.0	-7.42	7.42	919.0	7.42
MAY 18 JUL 27		-7.23	7.23	951.1	-7.23	7.23	925.6	-7.23	7.23	892.7	7.23	854.3	7.23	848.3	-7.23	7.23	848.3	-7.23	7.23	848.3	7.23
MAY 3 AUG 10		-6.97	6.97	888.1	-6.97	6.97	852.3	-6.97	6.97	810.3	6.97	763.8	6.97	757.8	-6.97	6.97	757.8	-6.97	6.97	757.8	715.0
APR 19 AUG 25		-6.67	6.67	808.2	-6.67	6.67	760.9	-6.67	6.67	708.6	6.67	653.3	6.67	647.6	-6.67	6.67	647.6	-6.67	6.67	647.6	596.9
APR 4 SEP 9		-6.34	6.34	716.6	-6.34	6.34	657.8	-6.34	6.34	595.3	6.34	531.3	6.34	525.3	-6.34	6.34	531.3	-6.34	6.34	531.3	467.6
MAR 21 SEP 23		-6.00	6.00	617.0	-6.00	6.00	547.9	-6.00	6.00	476.5	6.00	404.9	6.00	395.1	-6.00	6.00	404.9	-6.00	6.00	395.1	335.1
MAR 7 OCT 8		-5.58	5.58	517.2	-5.58	5.58	440.2	-5.58	5.58	362.5	5.58	286.5	5.58	278.6	-5.58	5.58	286.5	-5.58	5.58	278.6	214.2
FEB 20 OCT 22		-5.18	5.18	424.3	-5.00	5.00	342.6	-4.77	4.77	262.6	4.77	181.4	4.77	175.5	-4.46	4.46	186.6	-4.04	4.04	147.5	117.5
FEB 7 NOV 5		-4.81	4.81	343.7	-4.53	4.53	260.5	-4.18	4.18	181.4	4.18	109.7	4.18	103.7	-3.70	3.70	105.6	-2.98	2.98	49.2	49.2
JAN 23 NOV 19		-4.49	4.49	280.8	-4.13	4.13	198.3	-3.65	3.65	122.5	3.65	85.4	3.65	79.8	-2.97	2.97	57.8	-1.78	1.78	10.7	10.7
JAN 10 DEC 3		-4.24	4.24	238.0	-3.81	3.81	157.2	-3.42	3.42	85.4	3.42	23.3	3.42	17.4	-2.33	2.33	28.2	0.00	0.00	0.0	0.0
DEC 22		-4.10	4.10	213.7	-3.62	3.62	134.4	-2.96	2.96	65.7	2.96	1.86	1.86	1.44	-1.86	1.86	1.44	0.00	0.00	0.0	0.0
		YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.
		227.544	4.4329	206.566	3.930	185.248	3.524	164.637	3.132	146.427	2.786										
		60 PCT				70 PCT				80 PCT				90 PCT				100 PCT			
		THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY
		73.0	0.0	77.0	80.7	0.0	7.54	7.54	848.8	7.54	810.5	7.54	772.9	7.54	7.54	772.9	7.54	7.54	772.9	7.54	736.5
JUN 22		-7.54	7.54	887.0	-7.54	7.54	848.8	-7.54	7.54	810.5	-7.54	772.9	-7.54	7.54	772.9	-7.54	7.54	772.9	-7.54	736.5	
JUN 1 JUL 12		-7.42	7.42	842.9	-7.42	7.42	802.5	-7.42	7.42	762.2	7.42	723.2	7.42	717.2	-7.42	7.42	723.2	-7.42	7.42	717.2	685.5
MAY 18 JUL 27		-7.23	7.23	768.5	-7.23	7.23	724.4	-7.23	7.23	681.2	7.23	639.7	7.23	634.7	-7.23	7.23	639.7	-7.23	7.23	634.7	600.1
MAY 3 AUG 10		-6.97	6.97	665.4	-6.97	6.97	616.6	-6.97	6.97	569.6	6.97	525.0	6.97	519.7	-6.97	6.97	525.0	-6.97	6.97	519.7	482.9
APR 19 AUG 25		-6.67	6.67	541.1	-6.67	6.67	487.2	-6.67	6.67	436.1	6.67	388.4	6.67	383.4	-6.67	6.67	388.4	-6.67	6.67	383.4	343.7
APR 4 SEP 9		-6.34	6.34	406.0	-6.34	6.34	347.4	-6.34	6.34	292.6	6.34	242.0	6.34	237.0	-6.34	6.34	242.0	-6.34	6.34	237.0	195.3
MAR 21 SEP 23		-6.00	6.00	268.6	-6.00	6.00	206.3	-6.00	6.00	148.8	6.00	96.2	6.00	91.2	-6.00	6.00	96.2	-6.00	6.00	91.2	48.0
MAR 7 OCT 8		-4.75	4.75	147.3	-4.31	4.31	87.3	-3.54	3.54	36.4	3.54	1.38	1.38	1.5	-1.38	1.38	1.5	0.00	0.00	0.0	0.0
FEB 20 OCT 22		-3.40	3.40	58.1	-2.22	2.22	13.1	0.00	0.00	0.0	0.00	0.00	0.0	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.0
FEB 7 NOV 5		-1.63	1.63	6.7	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.0
JAN 23 NOV 19		0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.0
JAN 10 DEC 3		0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.0
DEC 22		0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.0

NOTE - FOR ASPECTS WITH WEST COMPONENTS, THE TIME AND SIGN OF SR AND SS ARE REVERSED.

LATITUDE 42 N
ASPECT S -

	SLOPE										SLOPE										SLOPE										
	10 PCT					20 PCT					30 PCT					40 PCT					50 PCT										
	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	
JUN 22	-7.24	7.24	1018.7			-7.00	7.00	1007.0			-6.79	6.79	989.0			-6.61	6.61	965.5			-6.46	6.46	938.1			-6.32	6.32	908.1			
JUN 1 JUL 12	-7.15	7.15	1003.4			-6.92	6.92	996.3			-6.73	6.73	982.5			-6.57	6.57	962.9			-6.43	6.43	938.9			-6.30	6.30	912.0			
MAY 18 JUL 27	-7.00	7.00	976.1			-6.80	6.80	976.7			-6.64	6.64	970.1			-6.49	6.49	957.1			-6.37	6.37	939.0			-6.26	6.26	917.2			
MAY 3 AUG 10	-6.79	6.79	935.2			-6.64	6.64	946.5			-6.51	6.51	949.8			-6.39	6.39	945.9			-6.29	6.29	936.2			-6.21	6.21	921.8			
APR 19 AUG 25	-6.54	6.54	880.8			-6.44	6.44	904.5			-6.35	6.35	919.7			-6.27	6.27	926.9			-6.20	6.20	927.3			-6.14	6.14	920.6			
APR 4 SEP 9	-6.28	6.28	815.0			-6.22	6.22	851.8			-6.18	6.18	879.6			-6.14	6.14	898.9			-6.10	6.10	910.6			-6.07	6.07	915.9			
MAR 21 SEP 23	-6.00	6.00	739.3			-6.00	6.00	788.7			-6.00	6.00	829.1			-6.00	6.00	860.7			-6.00	6.00	884.0			-6.00	6.00	900.1			
MAR 7 OCT 8	-5.66	5.66	659.2			-5.66	5.66	719.5			-5.66	5.66	771.1			-5.66	5.66	813.6			-5.66	5.66	847.6			-5.66	5.66	873.8			
FEB 20 OCT 22	-5.33	5.33	580.4			-5.33	5.33	649.0			-5.33	5.33	709.2			-5.33	5.33	760.4			-5.33	5.33	802.8			-5.33	5.33	837.0			
FEB 7 NOV 5	-5.03	5.03	508.3			-5.03	5.03	582.4			-5.03	5.03	648.5			-5.03	5.03	705.8			-5.03	5.03	754.3			-5.03	5.03	794.4			
JAN 23 NOV 19	-4.77	4.77	449.4			-4.77	4.77	526.6			-4.77	4.77	596.2			-4.77	4.77	657.2			-4.77	4.77	709.5			-4.77	4.77	753.5			
JAN 10 DEC 3	-4.58	4.58	407.7			-4.58	4.58	486.3			-4.58	4.58	558.5			-4.58	4.58	620.4			-4.58	4.58	674.8			-4.58	4.58	720.9			
DEC 22	-4.46	4.46	383.2			-4.46	4.46	462.3			-4.46	4.46	534.2			-4.46	4.46	597.9			-4.46	4.46	653.2			-4.46	4.46	700.2			
	YEAR	R.I.				YEAR	R.I.				YEAR	R.I.				YEAR	R.I.				YEAR	R.I.				YEAR	R.I.				
	264.826	5039				279.785	5323				291.858	5553				301.081	5728				307.673	5854				311.967	5935				
JUN 22	-6.32	6.32	908.1			-6.20	6.20	876.7			-6.10	6.10	845.1			-6.00	6.00	814.0			-5.91	5.91	783.9			-5.82	5.82	754.3			
JUN 1 JUL 12	-6.30	6.30	912.0			-6.19	6.19	883.2			-6.09	6.09	853.9			-6.00	6.00	824.8			-5.92	5.92	796.4			-5.83	5.83	766.8			
MAY 18 JUL 27	-6.26	6.26	917.2			-6.16	6.16	893.1			-6.08	6.08	867.8			-6.00	6.00	842.2			-5.93	5.93	816.8			-5.84	5.84	787.9			
MAY 3 AUG 10	-6.21	6.21	921.8			-6.13	6.13	904.3			-6.06	6.06	884.8			-6.00	6.00	864.2			-5.94	5.94	843.2			-5.86	5.86	814.4			
APR 19 AUG 25	-6.14	6.14	922.2			-6.09	6.09	913.0			-6.04	6.04	900.8			-6.00	6.00	886.7			-5.96	5.96	871.4			-5.90	5.90	852.5			
APR 4 SEP 9	-6.07	6.07	915.9			-6.05	6.05	916.0			-6.02	6.02	912.3			-6.00	6.00	905.7			-5.98	5.98	897.0			-5.95	5.95	891.4			
MAR 21 SEP 23	-6.00	6.00	900.1			-6.00	6.00	910.3			-6.00	6.00	915.5			-6.00	6.00	917.1			-6.00	6.00	915.8			-6.00	6.00	912.5			
MAR 7 OCT 8	-5.66	5.66	873.8			-5.66	5.66	893.2			-5.66	5.66	907.1			-5.66	5.66	916.4			-5.66	5.66	922.2			-5.66	5.66	922.2			
FEB 20 OCT 22	-5.33	5.33	837.0			-5.33	5.33	864.1			-5.33	5.33	885.0			-5.33	5.33	900.8			-5.33	5.33	912.5			-5.33	5.33	912.5			
FEB 7 NOV 5	-5.03	5.03	794.4			-5.03	5.03	827.1			-5.03	5.03	853.3			-5.03	5.03	874.0			-5.03	5.03	890.2			-5.03	5.03	890.2			
JAN 23 NOV 19	-4.77	4.77	753.5			-4.77	4.77	789.9			-4.77	4.77	819.6			-4.77	4.77	843.5			-4.77	4.77	862.9			-4.77	4.77	862.9			
JAN 10 DEC 3	-4.58	4.58	720.9			-4.58	4.58	759.4			-4.58	4.58	791.1			-4.58	4.58	817.0			-4.58	4.58	838.2			-4.58	4.58	838.2			
DEC 22	-4.46	4.46	700.2			-4.46	4.46	739.7			-4.46	4.46	772.5			-4.46	4.46	799.4			-4.46	4.46	821.5			-4.46	4.46	821.5			
	YEAR	R.I.				YEAR	R.I.				YEAR	R.I.				YEAR	R.I.				YEAR	R.I.				YEAR	R.I.				
	311.967	5935				314.367	5981				315.260	5998				315.007	5993				313.901	5972				313.901	5972				

NOTE - FOR ASPECTS WITH WEST COMPONENTS, THE TIME AND SIGN OF SR AND SS ARE REVERSED.

LATITUDE 42 N
ASPECT NNE - NNW

	10 PCT						20 PCT						30 PCT						40 PCT						50 PCT								
	SLOPE			SLOPE			SLOPE			SLOPE			SLOPE			SLOPE			SLOPE			SLOPE			SLOPE			SLOPE			SLOPE		
	THETA	ALPHA	R.I.	THETA	ALPHA	R.I.	THETA	ALPHA	R.I.	THETA	ALPHA	R.I.	THETA	ALPHA	R.I.	THETA	ALPHA	R.I.	THETA	ALPHA	R.I.	THETA	ALPHA	R.I.	THETA	ALPHA	R.I.	THETA	ALPHA	R.I.			
JUN 22	-7.54	7.54	1020.3	-7.54	7.54	1007.1	-7.54	7.54	985.3	-7.54	7.54	956.6	-7.54	7.54	923.0	-7.54	7.54	893.0	-7.54	7.54	863.0	-7.54	7.54	833.0	-7.54	7.54	803.0	-7.54	7.54	773.0	-7.54	7.54	743.0
JUN 1 JUL 12	-7.42	7.42	995.3	-7.42	7.42	977.7	-7.42	7.42	955.0	-7.42	7.42	932.7	-7.42	7.42	910.4	-7.42	7.42	888.1	-7.42	7.42	865.8	-7.42	7.42	843.5	-7.42	7.42	821.2	-7.42	7.42	798.9	-7.42	7.42	776.6
MAY 18 JUL 27	-7.23	7.23	952.0	-7.23	7.23	927.4	-7.23	7.23	902.8	-7.23	7.23	878.2	-7.23	7.23	853.6	-7.23	7.23	829.0	-7.23	7.23	804.4	-7.23	7.23	779.8	-7.23	7.23	755.2	-7.23	7.23	730.6	-7.23	7.23	706.0
MAY 3 AUG 10	-6.97	6.96	889.8	-6.97	6.94	855.8	-6.97	6.94	825.4	-6.97	6.92	791.0	-6.97	6.89	756.6	-6.97	6.87	722.2	-6.97	6.85	687.8	-6.97	6.83	653.4	-6.97	6.81	619.0	-6.97	6.79	584.6	-6.97	6.77	550.2
APR 19 AUG 25	-6.67	6.59	811.0	-6.67	6.49	766.6	-6.67	6.39	722.2	-6.67	6.29	677.8	-6.67	6.19	633.4	-6.67	6.09	589.0	-6.67	5.99	544.6	-6.67	5.89	500.2	-6.67	5.79	455.8	-6.67	5.69	411.4	-6.67	5.59	367.0
APR 4 SEP 9	-6.34	6.19	720.5	-6.34	6.02	666.1	-6.34	5.86	611.7	-6.34	5.68	557.3	-6.34	5.50	502.9	-6.34	5.32	448.5	-6.34	5.14	394.1	-6.34	4.96	339.7	-6.34	4.78	285.3	-6.34	4.60	230.9	-6.34	4.42	176.5
MAR 21 SEP 23	-6.00	5.79	622.2	-6.00	5.53	559.2	-6.00	5.27	495.0	-6.00	5.01	430.8	-6.00	4.75	366.6	-6.00	4.49	302.4	-6.00	4.23	238.2	-6.00	3.97	174.0	-6.00	3.71	109.8	-6.00	3.45	45.6	-6.00	3.19	-98.8
MAR 7 OCT 8	-5.66	5.38	523.4	-5.66	5.04	454.0	-5.66	4.64	385.7	-5.66	4.24	316.4	-5.66	3.84	247.0	-5.66	3.44	177.6	-5.66	3.04	108.2	-5.66	2.64	38.8	-5.66	2.24	-71.2	-5.66	1.84	-142.6	-5.66	1.44	-253.0
FEB 20 OCT 22	-5.33	4.98	431.1	-5.33	4.57	357.9	-5.33	4.07	288.0	-5.33	3.57	218.1	-5.33	3.07	148.2	-5.33	2.57	78.3	-5.33	2.07	8.4	-5.33	1.57	-122.2	-5.33	1.07	-252.6	-5.33	0.57	-382.2	-5.33	0.07	-511.8
FEB 7 NOV 5	-5.03	4.62	350.7	-5.03	4.12	276.1	-5.03	3.53	206.8	-5.03	2.93	136.9	-5.03	2.33	67.0	-5.03	1.73	-2.9	-5.03	1.13	-73.0	-5.03	0.53	-143.1	-5.03	-0.07	-272.6	-5.03	-0.57	-402.2	-5.03	-1.07	-531.8
JAN 23 NOV 19	-4.73	4.30	287.9	-4.73	3.73	213.6	-4.73	3.03	146.6	-4.73	2.33	76.7	-4.73	1.63	7.8	-4.73	1.03	-67.8	-4.73	0.43	-138.9	-4.73	-0.17	-268.4	-4.73	-0.67	-398.0	-4.73	-1.17	-527.6	-4.73	-1.67	-657.2
JAN 10 DEC 3	-4.43	4.06	245.1	-4.43	3.44	172.0	-4.43	2.67	107.8	-4.43	1.87	38.9	-4.43	1.07	-51.0	-4.43	0.27	-122.1	-4.43	-0.33	-227.2	-4.43	-0.83	-356.8	-4.43	-1.33	-486.4	-4.43	-1.83	-616.0	-4.43	-2.33	-745.6
DEC 22	-4.13	3.92	220.7	-4.13	3.25	148.8	-4.13	2.43	86.8	-4.13	1.57	17.9	-4.13	0.67	-42.0	-4.13	-0.13	-117.1	-4.13	-0.63	-246.7	-4.13	-1.13	-376.3	-4.13	-1.63	-505.9	-4.13	-2.13	-635.5	-4.13	-2.63	-765.1
JUN 22	-7.54	7.54	886.3	-7.54	7.54	848.0	-7.54	7.54	809.6	-7.54	7.54	771.2	-7.54	7.54	732.8	-7.54	7.54	694.4	-7.54	7.54	656.0	-7.54	7.54	617.6	-7.54	7.54	579.2	-7.54	7.54	540.8	-7.54	7.54	502.4
JUN 1 JUL 12	-7.42	7.42	844.2	-7.42	7.42	803.9	-7.42	7.42	763.6	-7.42	7.42	723.3	-7.42	7.42	683.0	-7.42	7.42	642.7	-7.42	7.42	602.4	-7.42	7.42	562.1	-7.42	7.42	521.8	-7.42	7.42	481.5	-7.42	7.42	441.2
MAY 18 JUL 27	-7.23	7.23	773.2	-7.23	7.23	725.6	-7.23	7.23	686.9	-7.23	7.23	648.2	-7.23	7.23	609.5	-7.23	7.23	570.8	-7.23	7.23	532.1	-7.23	7.23	493.4	-7.23	7.23	454.7	-7.23	7.23	416.0	-7.23	7.23	377.3
MAY 3 AUG 10	-6.97	6.79	674.7	-6.97	6.71	627.0	-6.97	6.53	580.3	-6.97	6.35	532.6	-6.97	6.17	484.9	-6.97	5.99	437.2	-6.97	5.81	389.5	-6.97	5.63	341.8	-6.97	5.45	294.1	-6.97	5.27	246.4	-6.97	5.09	198.7
APR 19 AUG 25	-6.67	5.79	559.0	-6.67	5.46	508.8	-6.67	5.04	462.1	-6.67	4.62	415.4	-6.67	4.20	368.7	-6.67	3.78	321.0	-6.67	3.36	273.3	-6.67	2.94	225.6	-6.67	2.52	177.9	-6.67	2.10	130.2	-6.67	1.68	82.5
APR 4 SEP 9	-6.34	4.83	437.6	-6.34	4.35	387.3	-6.34	3.79	342.6	-6.34	3.21	297.9	-6.34	2.63	253.2	-6.34	2.05	208.5	-6.34	1.47	163.8	-6.34	0.89	119.1	-6.34	0.31	74.4	-6.34	-0.27	29.7	-6.34	-0.79	-65.3
MAR 21 SEP 23	-6.00	3.89	318.3	-6.00	3.28	270.5	-6.00	2.60	230.2	-6.00	1.92	190.9	-6.00	1.24	151.6	-6.00	0.56	112.3	-6.00	-0.02	73.0	-6.00	-0.54	33.7	-6.00	-1.06	-6.6	-6.00	-1.58	-117.1	-6.00	-2.10	-227.2
MAR 7 OCT 8	-5.66	2.95	210.7	-5.66	2.21	167.9	-5.66	1.42	134.0	-5.66	0.63	99.1	-5.66	-0.16	64.2	-5.66	-0.87	29.3	-5.66	-1.57	-5.4	-5.66	-2.27	-70.5	-5.66	-2.97	-141.6	-5.66	-3.67	-251.7	-5.66	-4.37	-361.9
FEB 20 OCT 22	-5.33	1.99	122.1	-5.33	1.10	86.4	-5.33	0.17	60.7	-5.33	-0.52	25.8	-5.33	-1.22	9.9	-5.33	-1.92	-45.0	-5.33	-2.62	-100.1	-5.33	-3.32	-155.2	-5.33	-4.02	-210.3	-5.33	-4.72	-265.4	-5.33	-5.42	-375.6
FEB 7 NOV 5	-5.03	0.98	56.0	-5.03	-0.15	29.2	-5.03	-1.36	13.2	-5.03	-2.56	-3.8	-5.03	-3.76	-58.0	-5.03	-4.96	-117.2	-5.03	-6.16	-226.2	-5.03	-7.36	-335.2	-5.03	-8.56	-444.2	-5.03	-9.76	-553.2	-5.03	-10.96	-662.4
JAN 23 NOV 19	-4.10	-0.12	15.3	-4.10	-2.04	6.6	-4.10	-3.84	-1.74	-4.10	-5.64	-7.44	-4.10	-7.44	-9.24	-4.10	-9.24	-11.04	-4.10	-12.84	-14.64	-4.10	-16.64	-18.44	-4.10	-20.44	-24.24	-4.10	-28.04	-31.84	-4.10	-36.64	-40.44
JAN 10 DEC 3	-2.40	-1.82	0.0	-2.40	-3.62	-1.82	-2.40	-5.04	-3.62	-2.40	-6.46	-4.22	-2.40	-7.88	-4.22	-2.40	-9.30	-2.40	-10.72	-12.14	-2.40	-13.54	-16.36	-2.40	-19.18	-22.00	-2.40	-26.82	-29.64	-2.40	-34.46	-37.28	
DEC 22	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	
	YEAR	R.I.	139.904	YEAR	R.I.	127.384	YEAR	R.I.	116.638	YEAR	R.I.	107.306	YEAR	R.I.	99.182	YEAR	R.I.	91.058	YEAR	R.I.	82.934	YEAR	R.I.	74.810	YEAR	R.I.	66.686	YEAR	R.I.	58.562	YEAR	R.I.	50.438
	YEAR	R.I.	43359	YEAR	R.I.	209900	YEAR	R.I.	190532	YEAR	R.I.	171848	YEAR	R.I.	154690	YEAR	R.I.	137532	YEAR	R.I.	120374	YEAR	R.I.	103216	YEAR	R.I.	86058	YEAR	R.I.	68900	YEAR	R.I.	51742
	THETA	ALPHA	68.0	THETA	ALPHA	70.4	THETA	ALPHA	72.1	THETA	ALPHA	73.1	THETA	ALPHA	73.5	THETA	ALPHA	73.9	THETA	ALPHA	74.3	THETA	ALPHA	74.7	THETA	ALPHA	75.1	THETA	ALPHA	75.5	THETA	ALPHA	75.9
	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY

NOTE - FOR ASPECTS WITH WEST COMPONENTS, THE TIME AND SIGN OF SR AND SS ARE REVERSED.

LATITUDE 42 N
ASPECT SSE - SSW

		10 PCT			20 PCT			SLOPE			30 PCT			40 PCT			50 PCT		
		THETA	ALPHA		THETA	ALPHA		THETA	ALPHA		THETA	ALPHA		THETA	ALPHA		THETA	ALPHA	
		36.7	2.7		31.4	5.0		26.3	7.0		21.5	8.8		16.9	10.3				
		SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY
JUN 22		-7.44	7.08	1019.3	-7.36	6.69	1009.0	-7.30	6.36	993.0	-7.24	6.07	972.0	-7.19	5.82	947.4	-7.19	5.82	947.4
JUN 1 JUL 12		-7.35	6.98	1003.6	-7.29	6.61	997.6	-7.24	6.30	985.7	-7.19	6.02	968.5	-7.16	5.78	947.1	-7.16	5.78	947.1
MAY 18 JUL 27		-7.19	6.83	975.7	-7.16	6.49	977.1	-7.14	6.20	971.9	-7.11	5.94	961.0	-7.10	5.72	945.4	-7.10	5.72	945.4
MAY 3 AUG 10		-6.97	6.62	934.1	-6.97	6.32	945.5	-6.97	6.06	949.7	-6.97	5.83	947.5	-6.97	5.64	939.9	-6.97	5.64	939.9
APR 19 AUG 25		-6.67	6.37	878.8	-6.67	6.11	901.7	-6.67	5.90	917.0	-6.67	5.70	925.1	-6.67	5.50	927.0	-6.67	5.50	927.0
APR 4 SEP 9		-6.34	6.10	811.8	-6.34	5.89	846.7	-6.34	5.72	873.4	-6.34	5.56	892.5	-6.34	5.33	904.4	-6.34	5.33	904.4
MAR 21 SEP 23		-6.00	5.82	735.0	-6.00	5.66	781.1	-6.00	5.53	818.8	-6.00	5.41	848.3	-6.00	5.31	870.2	-6.00	5.31	870.2
MAR 7 OCT 8		-5.66	5.54	654.0	-5.66	5.43	709.6	-5.66	5.34	756.9	-5.66	5.27	795.8	-5.66	5.20	826.6	-5.66	5.20	826.6
FEB 20 OCT 22		-5.33	5.27	574.5	-5.33	5.21	637.5	-5.33	5.16	692.4	-5.33	5.12	738.8	-5.33	5.09	777.0	-5.33	5.09	777.0
FEB 7 NOV 5		-5.03	5.02	502.0	-5.03	5.01	570.0	-5.03	5.00	630.3	-5.03	4.99	682.3	-5.03	4.99	726.0	-5.03	4.99	726.0
JAN 23 NOV 19		-4.77	4.77	442.9	-4.77	4.77	513.9	-4.77	4.77	577.5	-4.77	4.77	633.0	-4.77	4.77	680.4	-4.77	4.77	680.4
JAN 10 DEC 3		-4.58	4.58	401.1	-4.58	4.58	473.4	-4.58	4.58	538.6	-4.58	4.58	595.0	-4.58	4.58	650.5	-4.58	4.58	650.5
DEC 22		-4.46	4.46	376.7	-4.46	4.46	443.4	-4.46	4.46	515.3	-4.46	4.46	578.5	-4.46	4.46	623.8	-4.46	4.46	623.8
		YEAR	R.i.		YEAR	R.i.		YEAR	R.i.		YEAR	R.i.		YEAR	R.i.		YEAR	R.i.	
		263.524	*5014		277.427	*5278		288.674	*5492		297.274	*5656		303.418	*5773				

		60 PCT			70 PCT			SLOPE			80 PCT			90 PCT			100 PCT		
		THETA	ALPHA		THETA	ALPHA		THETA	ALPHA		THETA	ALPHA		THETA	ALPHA		THETA	ALPHA	
		12.7	11.6		8.9	12.8		5.4	13.9		2.2	14.8		-0.7	15.7				
		SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY
JUN 22		-7.15	5.60	920.2	-7.12	5.40	891.8	-7.08	5.23	862.9	-7.05	5.07	834.6	-7.03	4.93	807.0	-7.03	4.93	807.0
JUN 1 JUL 12		-7.13	5.57	923.0	-7.10	5.39	897.1	-7.07	5.22	870.5	-7.05	5.07	844.1	-7.03	4.93	818.2	-7.03	4.93	818.2
MAY 18 JUL 27		-7.08	5.53	926.2	-7.07	5.35	904.8	-7.05	5.20	882.2	-7.04	5.06	859.2	-7.03	4.94	836.3	-7.03	4.94	836.3
MAY 3 AUG 10		-6.97	5.46	927.9	-6.97	5.31	912.9	-6.97	5.17	896.0	-6.97	5.05	877.9	-6.97	4.94	859.3	-6.97	4.94	859.3
APR 19 AUG 25		-6.67	5.39	923.7	-6.67	5.26	916.4	-6.67	5.14	906.3	-6.67	5.04	894.3	-6.67	4.94	881.1	-6.67	4.94	881.1
APR 4 SEP 9		-6.34	5.31	910.4	-6.34	5.20	911.5	-6.34	5.11	908.8	-6.34	5.02	903.5	-6.34	4.93	896.2	-6.34	4.93	896.2
MAR 21 SEP 23		-6.00	5.22	885.3	-6.00	5.14	894.8	-6.00	5.07	899.7	-6.00	5.01	901.1	-6.00	4.95	899.9	-6.00	4.95	899.9
MAR 7 OCT 8		-5.66	5.14	850.0	-5.66	5.09	867.2	-5.66	5.04	879.2	-5.66	5.00	887.0	-5.66	4.96	891.6	-5.66	4.96	891.6
FEB 20 OCT 22		-5.33	5.06	807.4	-5.33	5.03	831.2	-5.33	5.00	849.3	-5.33	4.98	862.7	-5.33	4.96	872.4	-5.33	4.96	872.4
FEB 7 NOV 5		-5.03	4.98	761.9	-5.03	4.98	790.9	-5.03	4.97	813.8	-5.03	4.97	831.7	-5.03	4.97	845.5	-5.03	4.97	845.5
JAN 23 NOV 19		-4.77	4.77	720.0	-4.77	4.77	752.6	-4.77	4.77	778.9	-4.77	4.77	800.0	-4.77	4.77	816.9	-4.77	4.77	816.9
JAN 10 DEC 3		-4.58	4.58	687.1	-4.58	4.58	721.7	-4.58	4.58	750.1	-4.58	4.58	773.1	-4.58	4.58	791.8	-4.58	4.58	791.8
DEC 22		-4.46	4.46	666.4	-4.46	4.46	702.1	-4.46	4.46	731.4	-4.46	4.46	755.4	-4.46	4.46	775.1	-4.46	4.46	775.1
		YEAR	R.i.		YEAR	R.i.		YEAR	R.i.		YEAR	R.i.		YEAR	R.i.		YEAR	R.i.	
		307.408	*5849		309.621	*5891		310.418	*5906		310.138	*5901		309.056	*5880				

NOTE - FOR ASPECTS WITH WEST COMPONENTS, THE TIME AND SIGN OF SR AND SS ARE REVERSED.

LATITUDE 42 N
ASPECT NE - NW

	SLOPE										SLOPE									
	10 PCT					20 PCT					30 PCT					40 PCT				
	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY
JUN 22	-7.54	7.39	1020.1			-7.54	7.21	1007.1			-7.54	6.99	986.2			-7.54	6.73	959.1		
JUN 1 JUL 12	-7.42	7.25	996.2			-7.42	7.05	980.2			-7.42	6.81	956.8			-7.42	6.51	927.9		
MAY 18 JUL 27	-7.23	7.03	955.0			-7.23	6.79	934.1			-7.23	6.51	906.7			-7.23	6.18	874.8		
MAY 3 AUG 10	-6.97	6.73	895.4			-6.97	6.45	868.2			-6.97	6.12	835.8			-6.97	5.74	800.3		
APR 19 AUG 25	-6.67	6.38	819.7			-6.67	6.05	785.4			-6.67	5.67	747.8			-6.67	5.25	708.8		
APR 4 SEP 9	-6.34	6.00	732.2			-6.34	5.62	691.3			-6.34	5.19	648.9			-6.34	4.73	607.1		
MAR 21 SEP 23	-6.00	5.61	636.6			-6.00	5.18	590.0			-6.00	4.70	544.1			-6.00	4.20	500.6		
MAR 7 OCT 8	-5.66	5.22	540.0			-5.66	4.74	489.3			-5.66	4.21	441.3			-5.66	3.66	397.6		
FEB 20 OCT 22	-5.33	4.85	449.3			-5.33	4.31	396.3			-5.33	3.74	347.7			-5.33	3.14	305.1		
FEB 7 NOV 5	-5.03	4.50	369.3			-5.03	3.91	316.2			-5.03	3.29	268.4			-5.03	2.65	227.9		
JAN 23 NOV 19	-4.77	4.20	307.5			-4.77	3.57	254.1			-4.77	2.90	208.0			-4.77	2.21	170.0		
JAN 10 DEC 3	-4.58	3.97	264.7			-4.58	3.31	212.2			-4.58	2.60	167.8			-4.58	1.88	132.1		
DEC 22	-4.46	3.84	240.2			-4.46	3.15	188.5			-4.46	2.42	145.3			-4.46	1.67	111.2		
	YEAR	R.I.	YEAR	R.I.	YEAR	YEAR	R.I.	YEAR	R.I.	YEAR	YEAR	R.I.	YEAR	R.I.	YEAR	YEAR	R.I.	YEAR	R.I.	YEAR
	233.449	.4442	219.094	.4168	204.853	.3898	191.294	.3640	178.843	.3403										
JUN 22	-7.54	6.03	895.0			-7.54	5.61	861.7			-7.54	5.17	829.6			-7.54	4.72	799.6		
JUN 1 JUL 12	-7.42	5.78	861.7			-7.42	5.35	828.1			-7.42	4.90	796.2			-7.42	4.46	766.6		
MAY 18 JUL 27	-7.23	5.39	805.6			-7.23	4.94	771.8			-7.23	4.49	740.2			-7.23	4.05	711.4		
MAY 3 AUG 10	-6.97	4.89	728.0			-6.97	4.43	694.2			-6.97	3.98	663.3			-6.97	3.54	635.6		
APR 19 AUG 25	-6.67	4.33	634.1			-6.67	3.86	600.9			-6.67	3.40	571.3			-6.67	2.97	545.3		
APR 4 SEP 9	-6.34	3.75	531.6			-6.34	3.26	499.7			-6.34	2.80	472.0			-6.34	2.37	448.2		
MAR 21 SEP 23	-6.00	3.15	426.4			-6.00	2.65	396.6			-6.00	2.19	371.5			-6.00	1.77	350.6		
MAR 7 OCT 8	-5.66	2.56	326.8			-5.66	2.04	299.9			-5.66	1.57	277.9			-5.66	1.16	260.1		
FEB 20 OCT 22	-5.33	1.97	239.7			-5.33	1.44	216.1			-5.33	.97	197.6			-5.33	.56	182.9		
FEB 7 NOV 5	-5.03	1.41	169.0			-5.03	.87	149.0			-5.03	.40	133.8			-5.03	.01	122.3		
JAN 23 NOV 19	-4.77	.92	117.6			-4.77	.36	100.9			-4.77	-.12	88.7			-4.77	-.52	79.8		
JAN 10 DEC 3	-4.58	.52	85.1			-4.58	-.05	70.9			-4.58	-.53	61.0			-4.58	-.92	53.9		
DEC 22	-4.46	.27	67.7			-4.46	-.31	55.1			-4.46	-.80	46.5			-4.46	-1.19	40.6		
	YEAR	R.I.	YEAR	R.I.	YEAR	YEAR	R.I.	YEAR	R.I.	YEAR	YEAR	R.I.	YEAR	R.I.	YEAR	YEAR	R.I.	YEAR	R.I.	YEAR
	167.735	.3191	158.012	.3006	149.625	.2847	142.447	.2710	136.265	.2593										

NOTE - FOR ASPECTS WITH WEST COMPONENTS, THE TIME AND SIGN OF SR AND SS ARE REVERSED.

LATITUDE 42 N
ASPECT SE - SW

	10 PCT						20 PCT						30 PCT						40 PCT						50 PCT					
	SLOPE			SLOPE			SLOPE			SLOPE			SLOPE			SLOPE			SLOPE			SLOPE			SLOPE			SLOPE		
	THETA	ALPHA	R.I.	THETA	ALPHA	R.I.	THETA	ALPHA	R.I.	THETA	ALPHA	R.I.	THETA	ALPHA	R.I.	THETA	ALPHA	R.I.	THETA	ALPHA	R.I.	THETA	ALPHA	R.I.	THETA	ALPHA	R.I.	THETA	ALPHA	R.I.
JUN 22	31.8	5.1	259.771	-7.54	6.97	1020.6	-7.54	6.48	1013.4	-7.54	6.04	1002.0	-7.54	5.66	986.9	-7.54	5.33	968.7	-7.54	5.03	955.4	-7.54	4.72	944.0	-7.54	4.42	933.0	-7.54	4.12	922.0
JUN 1 JUL 12				-7.42	6.88	1003.9	-7.42	6.40	1000.1	-7.42	5.97	992.0	-7.42	5.61	979.8	-7.42	5.28	968.4	-7.42	4.97	957.0	-7.42	4.67	945.0	-7.42	4.37	933.0	-7.42	4.07	922.0
MAY 18 JUL 27				-7.23	6.71	974.2	-7.23	6.26	976.2	-7.23	5.86	973.5	-7.23	5.51	966.3	-7.23	5.20	955.4	-7.23	4.90	944.0	-7.23	4.60	933.0	-7.23	4.30	922.0	-7.23	4.00	911.0
MAY 3 AUG 10				-6.97	6.49	930.2	-6.97	6.07	939.9	-6.97	5.70	944.4	-6.97	5.38	944.0	-6.97	5.07	933.0	-6.97	4.77	922.0	-6.97	4.47	911.0	-6.97	4.17	900.0	-6.97	3.87	889.0
APR 19 AUG 25				-6.67	6.23	872.1	-6.67	5.85	890.6	-6.67	5.52	903.5	-6.67	5.22	910.9	-6.67	4.92	900.0	-6.67	4.62	889.0	-6.67	4.32	878.0	-6.67	4.02	867.0	-6.67	3.72	856.0
APR 4 SEP 9				-6.34	5.95	802.3	-6.34	5.61	829.8	-6.34	5.31	851.4	-6.34	5.05	867.0	-6.34	4.82	876.9	-6.34	4.58	885.0	-6.34	4.34	894.0	-6.34	4.10	903.0	-6.34	3.86	912.0
MAR 21 SEP 23				-6.00	5.66	722.8	-6.00	5.36	758.8	-6.00	5.10	788.5	-6.00	4.88	811.8	-6.00	4.68	829.0	-6.00	4.48	840.0	-6.00	4.28	851.0	-6.00	4.08	862.0	-6.00	3.88	873.0
MAR 7 OCT 8				-5.66	5.37	639.4	-5.66	5.11	682.5	-5.66	4.89	719.2	-5.66	4.70	749.3	-5.66	4.53	772.9	-5.66	4.37	802.0	-5.66	4.22	832.0	-5.66	4.07	862.0	-5.66	3.92	892.0
FEB 20 OCT 22				-5.33	5.08	558.2	-5.33	4.87	606.6	-5.33	4.69	648.7	-5.33	4.53	684.1	-5.33	4.39	712.9	-5.33	4.26	743.0	-5.33	4.13	773.0	-5.33	4.00	804.0	-5.33	3.87	835.0
FEB 7 NOV 5				-5.03	4.82	484.6	-5.03	4.65	536.5	-5.03	4.50	582.3	-5.03	4.37	621.4	-5.03	4.26	653.9	-5.03	4.15	686.0	-5.03	4.04	718.0	-5.03	3.93	750.0	-5.03	3.82	782.0
JAN 23 NOV 19				-4.77	4.60	424.8	-4.77	4.46	478.7	-4.77	4.34	526.7	-4.77	4.24	568.1	-4.77	4.15	603.0	-4.77	4.07	638.0	-4.77	4.00	673.0	-4.77	3.93	708.0	-4.77	3.86	743.0
JAN 10 DEC 3				-4.58	4.44	382.7	-4.58	4.33	437.5	-4.58	4.23	486.5	-4.58	4.14	529.2	-4.58	4.07	565.5	-4.58	4.01	600.0	-4.58	3.95	635.0	-4.58	3.89	670.0	-4.58	3.83	705.0
DEC 22				-4.46	4.34	358.2	-4.46	4.24	413.3	-4.46	4.16	462.7	-4.46	4.09	505.9	-4.46	4.03	542.8	-4.46	3.97	577.0	-4.46	3.91	612.0	-4.46	3.85	647.0	-4.46	3.79	682.0
JUN 22				-7.54	5.03	948.4	-7.54	4.77	926.8	-7.54	4.54	904.7	-7.54	4.34	882.7	-7.54	4.16	861.2	-7.54	4.01	840.0	-7.54	3.87	819.0	-7.54	3.74	798.0	-7.54	3.61	777.0
JUN 1 JUL 12				-7.42	5.00	946.5	-7.42	4.74	927.0	-7.42	4.52	906.8	-7.42	4.32	886.5	-7.42	4.15	865.3	-7.42	4.00	844.0	-7.42	3.86	823.0	-7.42	3.73	802.0	-7.42	3.60	781.0
MAY 18 JUL 27				-7.23	4.93	941.5	-7.23	4.69	925.6	-7.23	4.48	906.6	-7.23	4.29	891.0	-7.23	4.13	870.3	-7.23	4.00	850.0	-7.23	3.87	830.0	-7.23	3.75	810.0	-7.23	3.62	790.0
MAY 3 AUG 10				-6.97	4.84	930.9	-6.97	4.62	919.9	-6.97	4.43	907.2	-6.97	4.25	893.4	-6.97	4.10	879.0	-6.97	3.97	865.0	-6.97	3.85	851.0	-6.97	3.73	837.0	-6.97	3.61	823.0
APR 19 AUG 25				-6.67	4.74	911.5	-6.67	4.54	906.4	-6.67	4.36	898.8	-6.67	4.20	889.6	-6.67	4.05	879.3	-6.67	3.92	869.0	-6.67	3.80	859.0	-6.67	3.68	849.0	-6.67	3.56	839.0
APR 4 SEP 9				-6.34	4.62	882.0	-6.34	4.45	883.1	-6.34	4.29	881.0	-6.34	4.15	876.7	-6.34	4.03	870.8	-6.34	3.92	861.0	-6.34	3.81	852.0	-6.34	3.70	843.0	-6.34	3.59	834.0
MAR 21 SEP 23				-6.00	4.50	840.8	-6.00	4.35	848.0	-6.00	4.22	851.4	-6.00	4.10	852.1	-6.00	3.99	850.6	-6.00	3.89	842.0	-6.00	3.79	834.0	-6.00	3.69	826.0	-6.00	3.59	818.0
MAR 7 OCT 8				-5.66	4.38	790.6	-5.66	4.25	803.4	-5.66	4.14	811.9	-5.66	4.04	817.1	-5.66	3.95	819.7	-5.66	3.86	812.0	-5.66	3.77	804.0	-5.66	3.68	796.0	-5.66	3.59	788.0
FEB 20 OCT 22				-5.33	4.27	735.5	-5.33	4.16	752.8	-5.33	4.07	765.6	-5.33	3.99	774.7	-5.33	3.91	783.3	-5.33	3.83	792.0	-5.33	3.75	801.0	-5.33	3.67	810.0	-5.33	3.59	819.0
FEB 7 NOV 5				-5.03	4.16	680.2	-5.03	4.08	701.0	-5.03	4.00	717.1	-5.03	3.94	729.3	-5.03	3.88	738.3	-5.03	3.82	747.0	-5.03	3.76	756.0	-5.03	3.70	765.0	-5.03	3.64	774.0
JAN 23 NOV 19				-4.77	4.08	631.8	-4.77	4.01	655.0	-4.77	3.95	673.3	-4.77	3.90	687.7	-4.77	3.85	698.8	-4.77	3.80	709.0	-4.77	3.75	719.0	-4.77	3.70	729.0	-4.77	3.65	739.0
JAN 10 DEC 3				-4.58	4.01	595.6	-4.58	3.96	620.2	-4.58	3.91	640.0	-4.58	3.87	655.7	-4.58	3.83	668.1	-4.58	3.79	680.0	-4.58	3.75	692.0	-4.58	3.71	704.0	-4.58	3.67	716.0
JAN 10 DEC 3				-4.46	3.97	573.6	-4.46	3.93	598.9	-4.46	3.89	619.4	-4.46	3.85	635.8	-4.46	3.82	648.9	-4.46	3.79	660.0	-4.46	3.76	672.0	-4.46	3.73	684.0	-4.46	3.69	696.0

NOTE - FOR ASPECTS WITH WEST COMPONENTS, THE TIME AND SIGN OF SR AND SS ARE REVERSED.

LATITUDE 42 N
ASPECT ENE - WNW

		10 PCT				20 PCT				SLOPE				30 PCT				40 PCT				50 PCT					
		THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	
		44.0	7.3				45.4	15.0				46.3	22.6				46.6	30.0				46.5	36.9				
JUN 22		-7.54	7.16	1020.6	-7.54	6.75	1010.5	-7.54	6.30	994.9	-7.54	5.83	975.6	-7.54	5.36	954.1	-7.54	5.36	954.1	-7.54	5.36	954.1	-7.54	5.36	954.1	-7.54	5.36
JUN 1 JUL 12		-7.42	7.04	998.5	-7.42	6.61	987.0	-7.42	6.16	970.6	-7.42	5.69	950.8	-7.42	5.22	929.3	-7.42	5.22	929.3	-7.42	5.22	929.3	-7.42	5.22	929.3	-7.42	5.22
MAY 16 JUL 27		-7.23	6.83	960.0	-7.23	6.39	946.4	-7.23	5.93	928.7	-7.23	5.46	908.3	-7.23	4.99	886.7	-7.23	4.99	886.7	-7.23	4.99	886.7	-7.23	4.99	886.7	-7.23	4.99
MAY 3 AUG 10		-6.97	6.55	904.2	-6.97	6.10	887.9	-6.97	5.62	868.5	-6.97	5.15	847.3	-6.97	4.68	825.7	-6.97	4.68	825.7	-6.97	4.68	825.7	-6.97	4.68	825.7	-6.97	4.68
APR 19 AUG 25		-6.67	6.22	832.6	-6.67	5.75	813.4	-6.67	5.27	792.3	-6.67	4.79	770.5	-6.67	4.32	749.1	-6.67	4.32	749.1	-6.67	4.32	749.1	-6.67	4.32	749.1	-6.67	4.32
APR 4 SEP 9		-6.34	5.87	749.3	-6.34	5.39	727.3	-6.34	4.89	704.7	-6.34	4.40	682.7	-6.34	3.94	661.8	-6.34	3.94	661.8	-6.34	3.94	661.8	-6.34	3.94	661.8	-6.34	3.94
MAR 21 SEP 23		-6.00	5.51	657.5	-6.00	5.00	633.1	-6.00	4.49	609.6	-6.00	4.00	587.7	-6.00	3.54	567.8	-6.00	3.54	567.8	-6.00	3.54	567.8	-6.00	3.54	567.8	-6.00	3.54
MAR 7 OCT 8		-5.66	5.15	563.9	-5.66	4.62	538.0	-5.66	4.10	514.1	-5.66	3.60	492.8	-5.66	3.14	474.2	-5.66	3.14	474.2	-5.66	3.14	474.2	-5.66	3.14	474.2	-5.66	3.14
FEB 20 OCT 22		-5.33	4.80	475.4	-5.33	4.25	448.6	-5.33	3.72	425.0	-5.33	3.22	404.7	-5.33	2.76	387.5	-5.33	2.76	387.5	-5.33	2.76	387.5	-5.33	2.76	387.5	-5.33	2.76
FEB 7 NOV 5		-5.03	4.47	397.2	-5.03	3.91	370.3	-5.03	3.36	347.4	-5.03	2.86	328.3	-5.03	2.40	312.8	-5.03	2.40	312.8	-5.03	2.40	312.8	-5.03	2.40	312.8	-5.03	2.40
JAN 23 NOV 19		-4.77	4.19	335.3	-4.77	3.61	308.7	-4.77	3.06	286.7	-4.77	2.55	268.9	-4.77	2.09	254.8	-4.77	2.09	254.8	-4.77	2.09	254.8	-4.77	2.09	254.8	-4.77	2.09
JAN 10 DEC 3		-4.58	3.98	292.6	-4.58	3.39	266.5	-4.58	2.83	245.3	-4.58	2.32	228.6	-4.58	1.86	215.6	-4.58	1.86	215.6	-4.58	1.86	215.6	-4.58	1.86	215.6	-4.58	1.86
DEC 22		-4.46	3.86	268.0	-4.46	3.26	242.3	-4.46	2.69	221.8	-4.46	2.17	205.7	-4.46	1.72	193.4	-4.46	1.72	193.4	-4.46	1.72	193.4	-4.46	1.72	193.4	-4.46	1.72
		YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.
		239.794	.4562	232.103	.4416	224.505	.4271	217.249	.4133	210.495	.4005																

		60 PCT				70 PCT				SLOPE				80 PCT				90 PCT				100 PCT					
		THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	
		46.1	43.2				45.3	48.9				44.4	53.9				43.4	58.3				42.4	62.2				
JUN 22		-7.54	4.91	932.0	-7.54	4.48	910.1	-7.54	4.09	889.1	-7.54	3.73	869.4	-7.54	3.41	850.9	-7.54	3.41	850.9	-7.54	3.41	850.9	-7.54	3.41	850.9	-7.54	3.41
JUN 1 JUL 12		-7.42	4.77	907.3	-7.42	4.34	885.8	-7.42	3.96	865.2	-7.42	3.61	845.9	-7.42	3.29	827.8	-7.42	3.29	827.8	-7.42	3.29	827.8	-7.42	3.29	827.8	-7.42	3.29
MAY 18 JUL 27		-7.23	4.54	865.0	-7.23	4.12	843.9	-7.23	3.75	824.0	-7.23	3.40	805.5	-7.23	3.10	788.3	-7.23	3.10	788.3	-7.23	3.10	788.3	-7.23	3.10	788.3	-7.23	3.10
MAY 3 AUG 10		-6.97	4.24	804.5	-6.97	3.83	784.4	-6.97	3.46	765.5	-6.97	3.13	748.1	-6.97	2.84	732.1	-6.97	2.84	732.1	-6.97	2.84	732.1	-6.97	2.84	732.1	-6.97	2.84
APR 19 AUG 25		-6.67	3.89	728.7	-6.67	3.49	709.7	-6.67	3.13	692.3	-6.67	2.81	676.3	-6.67	2.53	661.7	-6.67	2.53	661.7	-6.67	2.53	661.7	-6.67	2.53	661.7	-6.67	2.53
APR 4 SEP 9		-6.34	3.51	642.6	-6.34	3.12	625.0	-6.34	2.77	609.2	-6.34	2.47	594.9	-6.34	2.20	582.0	-6.34	2.20	582.0	-6.34	2.20	582.0	-6.34	2.20	582.0	-6.34	2.20
MAR 21 SEP 23		-6.00	3.12	550.0	-6.00	2.74	534.1	-6.00	2.40	520.1	-6.00	2.11	507.7	-6.00	1.85	496.6	-6.00	1.85	496.6	-6.00	1.85	496.6	-6.00	1.85	496.6	-6.00	1.85
MAR 7 OCT 8		-5.66	2.73	458.0	-5.66	2.36	444.0	-5.66	2.03	431.9	-5.66	1.75	421.4	-5.66	1.51	412.1	-5.66	1.51	412.1	-5.66	1.51	412.1	-5.66	1.51	412.1	-5.66	1.51
FEB 20 OCT 22		-5.33	2.35	373.1	-5.33	1.99	361.0	-5.33	1.68	350.8	-5.33	1.41	342.0	-5.33	1.18	334.4	-5.33	1.18	334.4	-5.33	1.18	334.4	-5.33	1.18	334.4	-5.33	1.18
FEB 7 NOV 5		-5.03	2.00	300.1	-5.03	1.65	289.7	-5.03	1.35	281.1	-5.03	1.09	273.9	-5.03	.87	267.8	-5.03	.87	267.8	-5.03	.87	267.8	-5.03	.87	267.8	-5.03	.87
JAN 23 NOV 19		-4.77	1.69	243.6	-4.77	1.35	234.7	-4.77	1.06	227.5	-4.77	.82	221.5	-4.77	.61	216.4	-4.77	.61	216.4	-4.77	.61	216.4	-4.77	.61	216.4	-4.77	.61
JAN 10 DEC 3		-4.58	1.47	205.5	-4.58	1.13	197.6	-4.58	.85	191.3	-4.58	.61	186.2	-4.58	.41	181.9	-4.58	.41	181.9	-4.58	.41	181.9	-4.58	.41	181.9	-4.58	.41
DEC 22		-4.46	1.33	184.0	-4.46	1.00	176.6	-4.46	.72	170.9	-4.46	.49	166.3	-4.46	.29	162.4	-4.46	.29	162.4	-4.46	.29	162.4	-4.46	.29	162.4	-4.46	.29
		YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.
		204.318	.3887	198.717	.3781	193.672	.3685	189.138	.3599	185.026	.3520																

NOTE - FOR ASPECTS WITH WEST COMPONENTS, THE TIME AND SIGN OF SR AND SS ARE REVERSED.

LATITUDE 42 N
ASPECT ESE - WSW

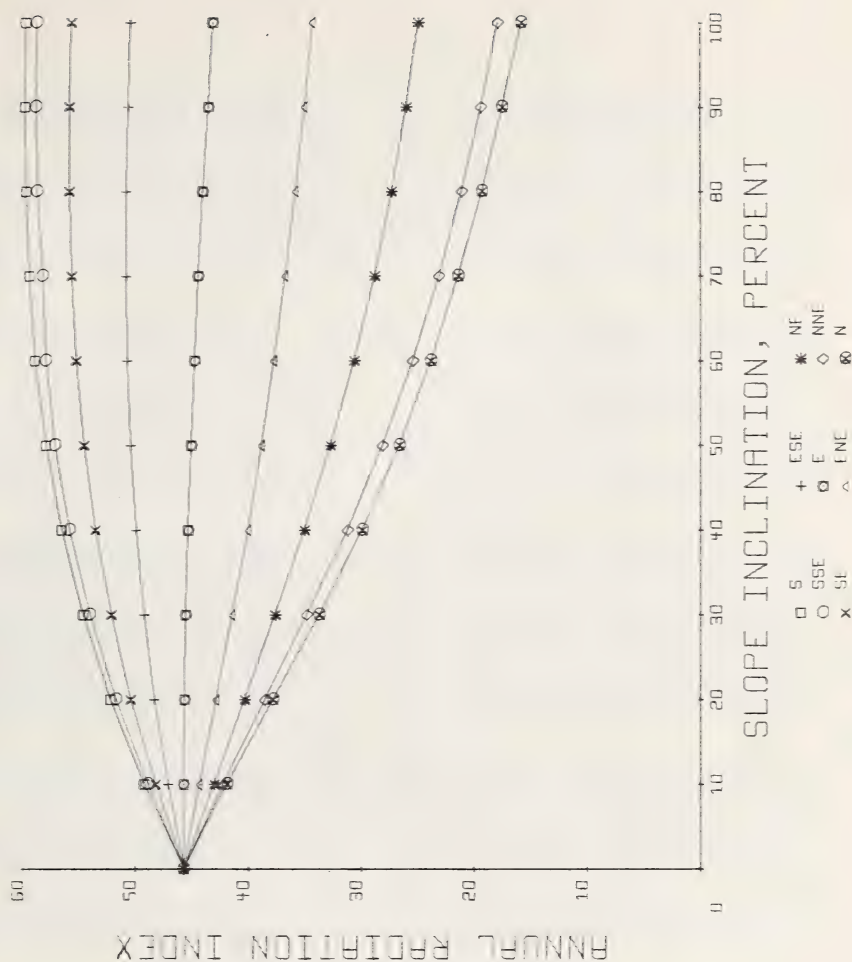
	10 PCT			20 PCT			SLOPE			30 PCT			40 PCT			50 PCT		
	THETA	ALPHA	R.I.	THETA	ALPHA	R.I.	THETA	ALPHA	R.I.	THETA	ALPHA	R.I.	THETA	ALPHA	R.I.	THETA	ALPHA	R.I.
JUN 22	-7.54	6.95	1021.4	-7.54	6.40	1015.6	-7.54	5.89	1006.8	-7.54	5.44	995.1	-7.54	5.03	981.1	-7.54	4.62	967.1
JUN 12	-7.42	6.84	1003.0	-7.42	6.30	999.4	-7.42	5.81	992.5	-7.42	5.36	982.8	-7.42	4.97	970.6	-7.42	4.56	958.4
JUN 18	-7.23	6.67	970.8	-7.23	6.14	970.6	-7.23	5.67	967.0	-7.23	5.24	960.5	-7.23	4.86	951.3	-7.23	4.45	942.1
MAY 3	-6.97	6.43	923.3	-6.97	5.93	927.6	-6.97	5.48	928.6	-6.97	5.07	926.3	-6.97	4.71	921.1	-6.97	4.30	911.9
MAY 10	-6.67	6.15	861.2	-6.67	5.68	870.7	-6.67	5.25	876.9	-6.67	4.87	879.6	-6.67	4.53	875.0	-6.67	4.12	865.8
APR 19	-6.34	5.85	787.3	-6.34	5.41	802.2	-6.34	5.01	813.7	-6.34	4.65	821.5	-6.34	4.34	825.7	-6.34	4.03	820.9
APR 4	-6.00	5.54	704.1	-6.00	5.13	723.9	-6.00	4.75	740.3	-6.00	4.43	752.9	-6.00	4.14	761.7	-6.00	3.84	770.5
MAR 21	-5.66	5.23	617.6	-5.66	4.84	641.5	-5.66	4.50	662.1	-5.66	4.20	678.8	-5.66	3.94	691.6	-5.66	3.64	704.4
MAR 7	-5.33	4.93	534.0	-5.33	4.57	561.1	-5.33	4.26	584.8	-5.33	3.98	604.7	-5.33	3.74	620.6	-5.33	3.49	636.5
FEB 20	-5.03	4.65	458.8	-5.03	4.32	487.9	-5.03	4.03	513.7	-5.03	3.78	535.8	-5.03	3.57	553.9	-5.03	3.32	572.0
FEB 7	-4.77	4.42	398.3	-4.77	4.11	428.4	-4.77	3.84	455.4	-4.77	3.61	478.7	-4.77	3.42	498.2	-4.77	3.23	518.7
JAN 23	-4.51	4.24	355.9	-4.51	3.95	386.5	-4.51	3.70	414.0	-4.51	3.49	437.9	-4.51	3.31	458.1	-4.51	3.12	478.2
JAN 10	-4.26	4.14	331.3	-4.26	3.86	362.0	-4.26	3.62	389.7	-4.26	3.41	413.8	-4.26	3.24	434.3	-4.26	3.07	454.8
DEC 22	-4.00	4.04	307.9	-4.00	3.76	332.6	-4.00	3.53	360.3	-4.00	3.32	388.0	-4.00	3.13	415.7	-4.00	2.94	443.6
DEC 9	-3.75	3.94	284.4	-3.75	3.66	309.1	-3.75	3.44	336.8	-3.75	3.23	364.5	-3.75	3.04	392.2	-3.75	2.85	420.9
NOV 26	-3.50	3.84	261.9	-3.50	3.56	286.6	-3.50	3.35	314.3	-3.50	3.14	342.0	-3.50	2.95	369.7	-3.50	2.76	397.4
NOV 13	-3.25	3.74	239.4	-3.25	3.48	264.1	-3.25	3.27	291.8	-3.25	3.06	319.5	-3.25	2.87	347.2	-3.25	2.68	374.9
NOV 1	-3.00	3.64	216.9	-3.00	3.38	241.6	-3.00	3.17	269.0	-3.00	2.96	296.7	-3.00	2.77	324.4	-3.00	2.58	352.1
OCT 19	-2.75	3.54	194.4	-2.75	3.28	219.1	-2.75	3.07	246.4	-2.75	2.86	273.9	-2.75	2.67	301.4	-2.75	2.48	329.0
OCT 6	-2.50	3.44	171.9	-2.50	3.18	196.6	-2.50	2.97	223.9	-2.50	2.76	251.4	-2.50	2.57	278.9	-2.50	2.38	306.4
SEP 24	-2.25	3.34	149.4	-2.25	3.02	174.1	-2.25	2.81	201.1	-2.25	2.60	228.6	-2.25	2.41	256.1	-2.25	2.22	283.6
SEP 11	-2.00	3.24	126.9	-2.00	2.92	151.6	-2.00	2.71	178.7	-2.00	2.50	205.8	-2.00	2.31	233.3	-2.00	2.12	260.9
SEP 1	-1.75	3.14	104.4	-1.75	2.82	129.1	-1.75	2.61	156.1	-1.75	2.40	183.2	-1.75	2.21	210.7	-1.75	2.02	238.3
AUG 19	-1.50	3.04	82.0	-1.50	2.72	106.6	-1.50	2.51	133.6	-1.50	2.30	160.7	-1.50	2.11	188.2	-1.50	1.92	215.8
AUG 6	-1.25	2.94	59.5	-1.25	2.62	84.1	-1.25	2.41	111.1	-1.25	2.20	138.2	-1.25	2.01	165.7	-1.25	1.82	193.3
JUL 25	-1.00	2.84	37.0	-1.00	2.52	61.6	-1.00	2.31	88.6	-1.00	2.10	115.7	-1.00	1.91	143.2	-1.00	1.72	170.8
JUL 12	-0.75	2.74	14.5	-0.75	2.42	39.1	-0.75	2.21	65.6	-0.75	2.00	92.7	-0.75	1.81	120.2	-0.75	1.62	147.8
JUN 30	-0.50	2.64	-8.0	-0.50	2.32	16.6	-0.50	2.11	43.1	-0.50	1.90	70.2	-0.50	1.71	97.7	-0.50	1.52	125.3
JUN 17	-0.25	2.54	-30.5	-0.25	2.22	-5.9	-0.25	2.01	19.6	-0.25	1.80	46.7	-0.25	1.61	74.2	-0.25	1.42	101.8
JUN 4	0.00	2.44	-53.0	0.00	2.10	-28.4	0.00	1.89	22.1	0.00	1.68	49.2	0.00	1.49	76.7	0.00	1.30	104.3
MAY 22	0.25	2.34	-75.5	0.25	2.02	-50.9	0.25	1.81	44.6	0.25	1.60	71.7	0.25	1.41	99.2	0.25	1.22	126.8
MAY 9	0.50	2.24	-98.0	0.50	1.92	-73.4	0.50	1.71	67.1	0.50	1.50	94.2	0.50	1.31	121.7	0.50	1.12	149.3
MAY 1	0.75	2.14	-120.5	0.75	1.82	-97.9	0.75	1.61	92.6	0.75	1.40	119.7	0.75	1.21	146.8	0.75	1.02	174.4
APR 19	1.00	2.04	-143.0	1.00	1.72	-122.4	1.00	1.51	119.1	1.00	1.30	146.2	1.00	1.11	173.3	1.00	0.92	200.9
APR 6	1.25	1.94	-165.5	1.25	1.62	-146.9	1.25	1.41	145.6	1.25	1.20	172.7	1.25	1.01	199.8	1.25	0.82	227.4
MAR 25	1.50	1.84	-188.0	1.50	1.52	-170.4	1.50	1.31	174.1	1.50	1.10	201.2	1.50	0.91	228.3	1.50	0.72	255.9
MAR 12	1.75	1.74	-210.5	1.75	1.42	-192.9	1.75	1.21	195.6	1.75	1.00	222.7	1.75	0.81	249.8	1.75	0.62	277.4
MAR 1	2.00	1.64	-233.0	2.00	1.32	-215.4	2.00	1.11	218.1	2.00	0.90	245.2	2.00	0.71	272.3	2.00	0.52	300.0
FEB 19	2.25	1.54	-255.5	2.25	1.22	-237.9	2.25	1.01	240.6	2.25	0.80	267.7	2.25	0.61	294.8	2.25	0.42	322.4
FEB 6	2.50	1.44	-278.0	2.50	1.12	-260.4	2.50	0.91	263.1	2.50	0.70	290.2	2.50	0.51	317.3	2.50	0.32	344.9
JAN 24	2.75	1.34	-300.5	2.75	1.02	-282.9	2.75	0.81	285.6	2.75	0.60	312.7	2.75	0.41	339.8	2.75	0.22	367.4
JAN 11	3.00	1.24	-323.0	3.00	0.92	-305.4	3.00	0.71	308.1	3.00	0.50	335.2	3.00	0.31	362.3	3.00	0.12	390.0
JAN 1	3.25	1.14	-345.5	3.25	0.82	-327.9	3.25	0.61	330.6	3.25	0.40	357.7	3.25	0.21	384.8	3.25	0.02	412.4
DEC 19	3.50	1.04	-368.0	3.50	0.72	-350.4	3.50	0.51	353.1	3.50	0.30	380.2	3.50	0.11	407.3	3.50	-0.08	434.9
DEC 6	3.75	0.94	-390.5	3.75	0.62	-372.9	3.75	0.41	375.6	3.75	0.20	402.7	3.75	0.01	429.8	3.75	-0.18	457.4
NOV 23	4.00	0.84	-413.0	4.00	0.52	-395.4	4.00	0.31	398.1	4.00	0.10	425.2	4.00	-0.11	452.3	4.00	-0.32	479.9
NOV 10	4.25	0.74	-435.5	4.25	0.42	-417.9	4.25	0.21	420.6	4.25	0.00	447.7	4.25	-0.21	474.8	4.25	-0.42	502.4
NOV 1	4.50	0.64	-458.0	4.50	0.32	-440.4	4.50	0.11	443.1	4.50	-0.10	470.2	4.50	-0.31	497.3	4.50	-0.52	524.9
OCT 19	4.75	0.54	-480.5	4.75	0.22	-462.9	4.75	0.01	465.6	4.75	-0.20	492.7	4.75	-0.41	519.8	4.75	-0.62	547.4
OCT 6	5.00	0.44	-503.0	5.00	0.12	-485.4	5.00	-0.09	488.1	5.00	-0.30	515.2	5.00	-0.51	542.3	5.00	-0.72	569.9
SEP 24	5.25	0.34	-525.5	5.25	0.02	-507.9	5.25	-0.19	510.6	5.25	-0.40	537.7	5.25	-0.61	564.8	5.25	-0.82	592.4
SEP 11	5.50	0.24	-548.0	5.50	-0.08	-530.4	5.50	-0.29	533.1	5.50	-0.50	560.2	5.50	-0.71	587.3	5.50	-0.92	614.9
SEP 1	5.75	0.14	-570.5	5.75	-0.18	-552.9	5.75	-0.39	555.6	5.75	-0.60	582.7	5.75	-0.81	609.8	5.75	-1.02	637.4
AUG 19	6.00	0.04	-593.0	6.00	-0.28	-575.4	6.00	-0.49	578.1	6.00	-0.70	605.2	6.00	-0.91	632.3	6.00	-1.12	660.0
AUG 6	6.25	-0.06	-615.5	6.25	-0.38	-597.9	6.25	-0.59	600.6	6.25	-0.80	627.7	6.25	-1.01	654.8	6.25	-1.22	682.4
JUL 25	6.50	-0.16	-638.0	6.50	-0.48	-620.4	6.50	-0.69	623.1	6.50	-0.90	650.2	6.50	-1.11	677.3	6.50	-1.32	705.0
JUL 12	6.75	-0.26	-660.5	6.75	-0.58	-642.9	6.75	-0.79	645.6	6.75	-1.00	672.7	6.75	-1.21	700.8	6.75	-1.42	728.4
JUN 30	7.00	-0.36	-683.0	7.00	-0.68	-665.4	7.00	-0.89	668.1	7.00	-1.10	695.2	7.00	-1.31	722.3	7.00	-1.52	750.0
JUN 17	7.25	-0.46	-705.5	7.25	-0.78	-687.9	7.25	-0.99	690.6	7.25	-1.20	717.7	7.25	-1.41	744.8	7.25	-1.62	772.4
JUN 4	7.50	-0.56	-728.0	7.50	-0.88	-710.4	7.50	-1.09	713.1	7.50	-1.30	740.2	7.50	-1.51	767.3	7.50	-1.72	795.0
MAY 22	7.75	-0.66	-750.5	7.75	-0.98	-732.9	7.75	-1.19	735.6	7.75	-1.40	762.7	7.75	-1.61	789.8	7.75	-1.82	817.4
MAY 9	8.00	-0.76	-773.0	8.00	-1.08	-755.4	8.00	-1.29	758.1	8.00	-1.50	785.2	8.00	-1.71	812.3	8.00	-1.92	840.0
MAY 1	8.25	-0.86	-795.5	8.25	-1.18	-777.9	8.25	-1.39	780.6	8.25	-1.60	807.7	8.25	-1.81	834.8	8.25	-2.02	862.4
APR 19	8.50	-0.96	-818.0	8.50	-1.28	-800.4	8.50	-1.49	803.1	8.50	-1.70	830.2	8.50	-1.91	857.3	8.50	-2.12	885.0
APR 6	8.75	-1.06	-840.5	8.75	-1.38	-822.9	8.75	-1.59	825.6	8.75	-1.80	852.7	8.75	-2.01	879.8	8.75	-2.22	907.4
MAR 25	9.00	-1.16	-863.0	9.00	-1.48	-845.4	9.00	-1.69	848.1	9.00	-1.90	875.2	9.00	-2.11	902.3	9.00	-2.32	930.0
MAR 12	9.25	-1.26	-885.5	9.25	-1.58	-867.9	9.25	-1.79	870.6	9.25	-2.00	897.7	9.25	-2.21	924.8	9.25	-2.42	952.4
MAR 1	9.50	-1.36	-908.0	9.50	-1.68	-890.4	9.50	-1.89	893.1									

NOTE - FOR ASPECTS WITH WEST COMPONENTS, THE TIME AND SIGN OF SR AND SS ARE REVERSED.

LATITUDE 42 N
ASPECT E - W

		10 PCT				20 PCT				SLOPE				30 PCT				40 PCT				50 PCT			
		THETA		ALPHA	THETA		ALPHA	THETA		ALPHA	THETA		ALPHA	THETA		ALPHA	THETA		ALPHA	THETA		ALPHA			
		SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY			
JUN 22		-7.54	7.01	1021.3	-7.54	6.48	1014.3	-7.54	5.95	1003.9	-7.54	5.46	990.8	-7.54	5.00	976.1	-7.54	4.54	961.4	-7.54	4.08	946.7			
JUN 1	JUL 12	-7.42	6.89	1001.0	-7.42	6.36	994.6	-7.42	5.85	982.8	-7.42	5.36	970.5	-7.42	4.90	956.6	-7.42	4.44	942.7	-7.42	3.98	928.0			
MAY 18	JUL 27	-7.23	6.70	965.7	-7.23	6.18	960.0	-7.23	5.67	951.3	-7.23	5.19	940.3	-7.23	4.73	927.8	-7.23	4.27	915.3	-7.23	3.81	890.6			
MAY 3	AUG 10	-6.97	6.45	914.1	-6.97	5.93	909.4	-6.97	5.43	902.1	-6.97	4.97	892.9	-6.97	4.51	880.3	-6.97	4.05	867.8	-6.97	3.59	843.1			
APR 19	AUG 25	-6.67	6.15	847.3	-6.67	5.64	843.8	-6.67	5.15	838.3	-6.67	4.70	831.2	-6.67	4.24	822.8	-6.67	3.78	814.3	-6.67	3.32	789.6			
APR 4	SEP 9	-6.34	5.83	768.8	-6.34	5.32	766.5	-6.34	4.85	762.8	-6.34	4.41	758.0	-6.34	3.95	750.5	-6.34	3.49	743.0	-6.34	3.03	718.3			
MAR 21	SEP 23	-6.00	5.49	681.2	-6.00	5.00	680.2	-6.00	4.53	678.4	-6.00	4.11	675.7	-6.00	3.74	672.2	-6.00	3.37	669.7	-6.00	3.00	645.0			
MAR 7	OCT 8	-5.66	5.15	591.2	-5.66	4.67	591.3	-5.66	4.22	591.1	-5.66	3.81	590.5	-5.66	3.46	589.0	-5.66	3.11	588.4	-5.66	2.76	563.7			
FEB 20	OCT 22	-5.33	4.83	505.1	-5.33	4.35	506.2	-5.33	3.92	507.4	-5.33	3.53	508.3	-5.33	3.19	508.7	-5.33	2.84	509.2	-5.33	2.49	484.5			
FEB 7	NOV 5	-5.03	4.53	428.4	-5.03	4.06	430.2	-5.03	3.64	432.4	-5.03	3.26	434.6	-5.03	2.94	436.4	-5.03	2.62	438.1	-5.03	2.30	413.4			
JAN 23	NOV 19	-4.77	4.27	367.1	-4.77	3.81	369.4	-4.77	3.40	372.3	-4.77	3.04	375.4	-4.77	2.72	378.1	-4.77	2.41	380.8	-4.77	2.10	356.1			
JAN 10	DEC 3	-4.58	4.08	324.4	-4.58	3.63	327.0	-4.58	3.22	330.4	-4.58	2.87	334.0	-4.58	2.57	337.2	-4.58	2.27	340.3	-4.58	1.97	315.6			
DEC 22		-4.46	3.97	299.8	-4.46	3.51	302.6	-4.46	3.12	306.2	-4.46	2.77	310.0	-4.46	2.47	313.5	-4.46	2.17	316.9	-4.46	1.87	292.2			
		YEAR	R.i.e.	YEAR	R.i.e.	YEAR	R.i.e.	YEAR	R.i.e.	YEAR	R.i.e.	YEAR	R.i.e.	YEAR	R.i.e.	YEAR	R.i.e.	YEAR	R.i.e.	YEAR	R.i.e.	YEAR	R.i.e.		
		247.032	4700	246.441	4689	245.455	4670	244.082	4644	242.359	4611														
		60 PCT				70 PCT				SLOPE				80 PCT				90 PCT				100 PCT			
		THETA		ALPHA	THETA		ALPHA	THETA		ALPHA	THETA		ALPHA	THETA		ALPHA	THETA		ALPHA	THETA		ALPHA			
		SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY			
JUN 22		-7.54	4.59	960.3	-7.54	4.22	944.0	-7.54	3.89	927.8	-7.54	3.60	911.9	-7.54	3.34	896.4	-7.54	3.08	880.9	-7.54	2.82	865.4			
JUN 1	JUL 12	-7.42	4.50	943.6	-7.42	4.14	928.2	-7.42	3.81	912.7	-7.42	3.53	897.5	-7.42	3.28	882.8	-7.42	3.02	868.1	-7.42	2.76	852.6			
MAY 18	JUL 27	-7.23	4.35	914.2	-7.23	4.00	900.2	-7.23	3.69	886.0	-7.23	3.41	872.1	-7.23	3.17	858.4	-7.23	2.92	844.7	-7.23	2.67	829.2			
MAY 3	AUG 10	-6.97	4.16	870.7	-6.97	3.82	858.6	-6.97	3.51	846.2	-6.97	3.25	834.0	-6.97	3.02	821.9	-6.97	2.77	809.8	-6.97	2.52	794.3			
APR 19	AUG 25	-6.67	3.92	813.5	-6.67	3.60	803.6	-6.67	3.31	793.4	-6.67	3.06	783.2	-6.67	2.84	772.9	-6.67	2.62	762.6	-6.67	2.40	747.1			
APR 4	SEP 9	-6.34	3.67	745.2	-6.34	3.36	737.7	-6.34	3.09	729.8	-6.34	2.85	721.7	-6.34	2.64	713.5	-6.34	2.43	705.3	-6.34	2.21	689.8			
MAR 21	SEP 23	-6.00	3.41	667.8	-6.00	3.11	662.7	-6.00	2.86	657.1	-6.00	2.64	651.1	-6.00	2.44	644.9	-6.00	2.24	638.7	-6.00	2.04	623.2			
MAR 7	OCT 8	-5.66	3.14	586.9	-5.66	2.87	584.0	-5.66	2.63	580.5	-5.66	2.42	576.5	-5.66	2.24	572.2	-5.66	2.04	567.9	-5.66	1.84	552.4			
FEB 20	OCT 22	-5.33	2.89	508.4	-5.33	2.63	507.3	-5.33	2.41	503.6	-5.33	2.21	503.4	-5.33	2.04	500.7	-5.33	1.87	497.0	-5.33	1.69	481.5			
FEB 7	NOV 5	-5.03	2.65	437.5	-5.03	2.41	437.8	-5.03	2.20	437.5	-5.03	2.02	436.6	-5.03	1.87	435.2	-5.03	1.72	433.6	-5.03	1.57	418.1			
JAN 23	NOV 19	-4.77	2.46	380.1	-4.77	2.23	381.4	-4.77	2.03	382.1	-4.77	1.86	382.1	-4.77	1.72	381.6	-4.77	1.59	380.1	-4.77	1.44	364.6			
JAN 10	DEC 3	-4.58	2.31	339.8	-4.58	2.09	341.8	-4.58	1.90	343.0	-4.58	1.75	343.6	-4.58	1.61	343.7	-4.58	1.48	342.2	-4.58	1.35	326.7			
DEC 22		-4.46	2.22	316.4	-4.46	2.01	318.6	-4.46	1.83	320.2	-4.46	1.67	321.1	-4.46	1.54	321.5	-4.46	1.41	320.0	-4.46	1.28	304.5			
		YEAR	R.i.e.	YEAR	R.i.e.	YEAR	R.i.e.	YEAR	R.i.e.	YEAR	R.i.e.	YEAR	R.i.e.	YEAR	R.i.e.	YEAR	R.i.e.	YEAR	R.i.e.	YEAR	R.i.e.	YEAR	R.i.e.		
		240.336	4573	238.081	4530	235.669	4484	233.173	4436	230.631	4388														

RADIATION INDEXES FOR VARIOUS FACETS AT LATITUDE 44 N



HORIZONTAL SURFACE

LATITUDE 44 N

	SR	SS	LY
JUN 22	-7.66	7.66	1024.0
JUN 1 JUL 12	-7.53	7.53	1001.8
MAY 18 JUL 27	-7.32	7.32	963.2
MAY 3 AUG 10	-7.04	7.04	907.2
APR 19 AUG 25	-6.72	6.72	835.4
APR 4 SEP 9	-6.36	6.36	751.9
MAR 21 SEP 23	-6.00	6.00	659.7
MAR 7 OCT 8	-5.64	5.64	565.8
FEB 20 OCT 22	-5.28	5.28	476.9
FEB 7 NOV 5	-4.96	4.96	398.5
JAN 23 NOV 19	-4.68	4.68	336.3
JAN 10 DEC 3	-4.47	4.47	293.4
DEC 22	-4.34	4.34	268.7

YEAR R.I.
240.588 .4577

LATITUDE 44 N
ASPECT N -

		SLOPE						40 PCT						50 PCT					
		10 PCT		20 PCT		30 PCT		40 PCT		50 PCT		60 PCT		70 PCT		80 PCT		90 PCT	
		THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA
		49.7	0.0	55.3	0.0	60.7	0.0	65.8	0.0	70.6	0.0	75.0	0.0	79.0	0.0	82.7	0.0	86.0	0.0
		SR	SS	LY	SS	LY	SS	SR	SS	LY	SS	SR	SS	LY	SS	SR	SS	LY	SS
JUN 22		-7.66	7.66	1018.6	-7.66	7.66	1003.5	-7.66	7.66	980.0	-7.66	7.66	949.7	-7.66	7.66	914.6	-7.66	7.66	879.5
JUN 1 JUL 12		-7.53	7.53	991.2	-7.53	7.53	971.3	-7.53	7.53	943.5	-7.53	7.53	909.4	-7.53	7.53	875.3	-7.53	7.53	841.2
FEB 20 OCT 22		-7.32	7.32	944.2	-7.32	7.32	916.4	-7.32	7.32	881.5	-7.32	7.32	846.3	-7.32	7.32	812.2	-7.32	7.32	778.1
MAY 18 JUL 27		-7.04	7.04	877.0	-7.04	7.04	838.9	-7.04	7.04	794.7	-7.04	7.04	750.6	-7.04	7.04	706.5	-7.04	7.04	662.4
MAY 3 AUG 10		-6.72	6.72	792.6	-6.72	6.72	742.9	-6.72	6.72	688.5	-6.72	6.72	634.4	-6.72	6.72	580.3	-6.72	6.72	526.2
APR 19 AUG 25		-6.36	6.36	696.4	-6.36	6.36	635.4	-6.36	6.36	571.0	-6.36	6.36	505.3	-6.36	6.36	440.3	-6.36	6.36	375.2
APR 4 SEP 9		-6.00	6.00	593.0	-6.00	6.00	521.9	-6.00	6.00	448.8	-6.00	6.00	375.9	-6.00	6.00	305.1	-6.00	6.00	230.0
MAR 21 SEP 23		-5.55	5.55	490.2	-5.45	5.45	411.7	-5.33	5.33	332.9	-5.21	5.21	256.2	-5.09	5.09	183.7	-4.97	4.97	107.2
MAR 7 OCT 8		-5.12	5.12	395.4	-4.92	4.92	313.0	-4.66	4.66	232.7	-4.41	4.41	157.3	-4.15	4.15	89.7	-3.90	3.90	14.6
FEB 20 OCT 22		-4.72	4.72	314.0	-4.42	4.42	230.9	-4.01	4.01	152.7	-3.44	3.44	83.2	-2.52	2.52	27.5	-1.40	1.40	0.0
FEB 7 NOV 5		-4.37	4.37	251.1	-3.97	3.97	169.6	-3.42	3.42	96.0	-2.58	2.58	35.7	-1.74	1.74	11.2	-0.98	0.98	0.0
JAN 23 NOV 19		-4.11	4.11	208.7	-3.62	3.62	129.6	-2.94	2.94	61.2	-2.04	2.04	29.4	-1.12	1.12	0.0	-0.00	0.00	0.0
JAN 10 DEC 3		-3.94	3.94	184.8	-3.40	3.40	107.7	-2.61	2.61	43.3	-1.74	1.74	11.2	-0.98	0.98	0.0	-0.00	0.00	0.0
DEC 22																			
		YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.
		220.380	.4193	199.035	.3787	177.574	.3378	157.233	.2992	139.981	.2663								

		SLOPE						90 PCT						100 PCT					
		60 PCT		70 PCT		80 PCT		90 PCT		100 PCT		110 PCT		120 PCT		130 PCT		140 PCT	
		THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA
		75.0	0.0	79.0	0.0	82.7	0.0	86.0	0.0	89.0	0.0	92.0	0.0	95.0	0.0	98.0	0.0	101.0	0.0
		SR	SS	LY	SS	LY	SS	SR	SS	LY	SS	SR	SS	LY	SS	SR	SS	LY	SS
JUN 22		-7.66	7.66	876.5	-7.66	7.66	837.1	-7.66	7.66	797.7	-7.66	7.66	759.2	-7.66	7.66	721.8	-7.66	7.66	684.3
JUN 1 JUL 12		-7.53	7.53	830.2	-7.53	7.53	788.5	-7.53	7.53	747.2	-7.53	7.53	707.2	-7.53	7.53	668.5	-7.53	7.53	629.8
MAY 18 JUL 27		-7.32	7.32	752.3	-7.32	7.32	706.9	-7.32	7.32	662.7	-7.32	7.32	620.3	-7.32	7.32	579.7	-7.32	7.32	539.1
MAY 3 AUG 10		-7.04	7.04	644.9	-7.04	7.04	594.9	-7.04	7.04	546.9	-7.04	7.04	501.5	-7.04	7.04	458.5	-7.04	7.04	415.5
APR 19 AUG 25		-6.72	6.72	516.3	-6.72	6.72	461.3	-6.72	6.72	409.4	-6.72	6.72	360.9	-6.72	6.72	315.5	-6.72	6.72	272.5
APR 4 SEP 9		-6.36	6.36	377.6	-6.36	6.36	318.1	-6.36	6.36	262.7	-6.36	6.36	211.6	-6.36	6.36	164.2	-6.36	6.36	121.2
MAR 21 SEP 23		-6.00	6.00	237.9	-6.00	6.00	175.0	-6.00	6.00	117.1	-6.00	6.00	64.3	-6.00	6.00	15.7	-6.00	6.00	0.0
MAR 7 OCT 8		-5.56	5.56	117.2	-5.39	5.39	58.7	-5.26	5.26	12.7	-5.13	5.13	0.0	-5.00	5.00	0.0	-4.87	4.87	0.0
FEB 20 OCT 22		-5.12	5.12	34.0	-4.92	4.92	1.1	-4.79	4.79	0.0	-4.66	4.66	0.0	-4.53	4.53	0.0	-4.40	4.40	0.0
FEB 7 NOV 5		-4.72	4.72	0.0	-4.42	4.42	0.0	-4.01	4.01	0.0	-3.44	3.44	0.0	-2.58	2.58	0.0	-1.74	1.74	0.0
JAN 23 NOV 19		-4.11	4.11	0.0	-3.62	3.62	0.0	-2.94	2.94	0.0	-2.04	2.04	0.0	-1.12	1.12	0.0	-0.98	0.98	0.0
JAN 10 DEC 3		-3.94	3.94	0.0	-3.40	3.40	0.0	-2.61	2.61	0.0	-1.74	1.74	0.0	-0.98	0.98	0.0	-0.00	0.00	0.0
DEC 22																			
		YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.
		125.325	.2384	112.522	.2141	101.474	.1931	91.958	.1750	83.301	.1585								

NOTE - FOR ASPECTS WITH WEST COMPONENTS, THE TIME AND SIGN OF SR AND SS ARE REVERSED.

LATITUDE 44 N
ASPECT S -

		10 PCT				20 PCT				30 PCT				40 PCT				50 PCT			
		THETA		ALPHA		THETA		ALPHA		THETA		ALPHA		THETA		ALPHA		THETA		ALPHA	
		38.3		0.0		32.7		0.0		27.3		0.0		22.2		0.0		17.4		0.0	
		SR	SS	LY		SR	SS	LY		SR	SS	LY		SR	SS	LY		SR	SS	LY	
JUN 22		-7.34	7.34	1021.2		-7.08	7.08	1012.0		-6.86	6.86	996.5		-6.68	6.68	975.5		-6.52	6.52	950.3	
JUN 1 JUL 12		-7.24	7.24	1004.2		-7.00	7.00	999.6		-6.80	6.80	988.4		-6.63	6.63	971.4		-6.49	6.49	949.7	
MAY 18 JUL 27		-7.07	7.07	974.0		-6.87	6.87	977.4		-6.70	6.70	973.4		-6.55	6.55	963.0		-6.42	6.42	947.3	
MAY 3 AUG 10		-6.85	6.85	929.3		-6.69	6.69	943.4		-6.55	6.55	949.5		-6.44	6.44	948.3		-6.33	6.33	941.0	
APR 19 AUG 25		-6.58	6.58	870.4		-6.47	6.47	897.0		-6.38	6.38	914.9		-6.30	6.30	924.9		-6.23	6.23	927.9	
APR 4 SEP 9		-6.30	6.30	800.0		-6.24	6.24	839.5		-6.19	6.19	870.1		-6.15	6.15	892.2		-6.12	6.12	906.5	
MAR 21 SEP 23		-6.00	6.00	719.9		-6.00	6.00	771.9		-6.00	6.00	815.0		-6.00	6.00	849.1		-6.00	6.00	875.0	
MAR 7 OCT 8		-5.64	5.64	636.0		-5.64	5.64	698.6		-5.64	5.64	752.5		-5.64	5.64	797.4		-5.64	5.64	833.7	
FEB 20 OCT 22		-5.28	5.28	554.2		-5.28	5.28	624.6		-5.28	5.28	686.7		-5.28	5.28	739.9		-5.28	5.28	784.3	
FEB 7 NOV 5		-4.96	4.96	480.1		-4.96	4.96	555.4		-4.96	4.96	622.8		-4.96	4.96	681.6		-4.96	4.96	731.7	
JAN 23 NOV 19		-4.68	4.68	419.9		-4.68	4.68	497.7		-4.68	4.68	568.1		-4.68	4.68	630.2		-4.68	4.68	683.7	
JAN 10 DEC 3		-4.47	4.47	377.5		-4.47	4.47	456.2		-4.47	4.47	527.9		-4.47	4.47	591.4		-4.47	4.47	646.6	
DEC 22		-4.34	4.34	352.7		-4.34	4.34	431.6		-4.34	4.34	503.6		-4.34	4.34	567.7		-4.34	4.34	623.6	
		YEAR	R.I.			YEAR	R.I.			YEAR	R.I.			YEAR	R.I.			YEAR	R.I.		
		258.813	.4924			274.472	.5222			287.281	.5466			297.247	.5655			304.567	.5795		
		SLOPE				SLOPE				SLOPE				SLOPE				SLOPE			
		13.0		0.0		9.0		0.0		5.3		0.0		2.0		0.0		-1.0		0.0	
		SR	SS	LY		SR	SS	LY		SR	SS	LY		SR	SS	LY		SR	SS	LY	
JUN 22		-6.39	6.39	922.3		-6.26	6.26	892.7		-6.16	6.16	862.7		-6.06	6.06	833.0		-5.97	5.97	804.1	
JUN 1 JUL 12		-6.36	6.36	924.8		-6.24	6.24	897.9		-6.14	6.14	870.3		-6.05	6.05	842.7		-5.97	5.97	815.5	
MAY 18 JUL 27		-6.31	6.31	927.7		-6.21	6.21	905.6		-6.13	6.13	882.0		-6.05	6.05	857.9		-5.98	5.98	833.9	
MAY 3 AUG 10		-6.25	6.25	929.0		-6.17	6.17	913.5		-6.10	6.10	895.8		-6.04	6.04	876.9		-5.98	5.98	857.4	
APR 19 AUG 25		-6.17	6.17	925.2		-6.12	6.12	918.1		-6.07	6.07	907.9		-6.03	6.03	895.5		-5.99	5.99	881.8	
APR 4 SEP 9		-6.09	6.09	914.2		-6.06	6.06	916.5		-6.04	6.04	914.8		-6.01	6.01	910.0		-5.99	5.99	903.0	
MAR 21 SEP 23		-6.00	6.00	893.5		-6.00	6.00	905.8		-6.00	6.00	913.1		-6.00	6.00	916.5		-6.00	6.00	917.0	
MAR 7 OCT 8		-5.64	5.64	862.1		-5.64	5.64	883.7		-5.64	5.64	899.5		-5.64	5.64	910.6		-5.64	5.64	918.1	
FEB 20 OCT 22		-5.28	5.28	820.5		-5.28	5.28	849.5		-5.28	5.28	872.2		-5.28	5.28	889.6		-5.28	5.28	902.9	
FEB 7 NOV 5		-4.96	4.96	773.5		-4.96	4.96	807.8		-4.96	4.96	835.5		-4.96	4.96	857.6		-4.96	4.96	875.2	
JAN 23 NOV 19		-4.68	4.68	728.8		-4.68	4.68	766.5		-4.68	4.68	797.4		-4.68	4.68	822.6		-4.68	4.68	843.1	
JAN 10 DEC 3		-4.47	4.47	693.6		-4.47	4.47	733.0		-4.47	4.47	765.8		-4.47	4.47	792.9		-4.47	4.47	814.9	
DEC 22		-4.34	4.34	671.3		-4.34	4.34	711.6		-4.34	4.34	745.2		-4.34	4.34	772.9		-4.34	4.34	795.9	
		YEAR	R.I.			YEAR	R.I.			YEAR	R.I.			YEAR	R.I.			YEAR	R.I.		
		309.456	.5890			312.607	.5948			314.100	.5976			314.395	.5982			313.789	.5970		

NOTE - FOR ASPECTS WITH WEST COMPONENTS, THE TIME AND SIGN OF SR AND SS ARE REVERSED.

LATITUDE 44 N
ASPECT NNE - NNW

		SLOPE																
		10 PCT			20 PCT			30 PCT			40 PCT			50 PCT				
		THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY		
		49.2	3.3				54.2	7.4				63.1	18.3	66.7	25.7			
		SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY		
JUN 22		-7.66	7.66	1018.6	-7.66	7.66	1003.6	-7.66	7.66	980.0	-7.66	7.66	949.8	-7.66	7.66	918.7		
JUN 1 JUL 12		-7.53	7.53	991.7	-7.53	7.53	972.2	-7.53	7.53	944.7	-7.53	7.53	910.9	-7.53	7.53	872.9		
FEB 20 OCT 22		-7.32	7.32	945.3	-7.32	7.32	918.5	-7.32	7.32	884.6	-7.32	7.32	845.2	-7.32	7.32	802.4		
MAY 18 JUL 27		-7.04	7.04	878.9	-7.04	7.03	842.7	-7.04	7.02	800.3	-7.04	7.00	753.7	-7.04	6.98	708.7		
MAY 3 AUG 10		-6.72	6.64	795.6	-6.72	6.54	749.0	-6.72	6.42	697.6	-6.72	6.27	643.5	-6.72	6.06	588.8		
APR 19 AUG 25		-6.36	6.21	700.6	-6.36	6.03	644.1	-6.36	5.81	584.8	-6.36	5.53	524.7	-6.36	5.17	466.2		
APR 4 SEP 9		-6.00	5.78	598.3	-6.00	5.51	533.6	-6.00	5.18	468.2	-6.00	4.78	404.4	-6.00	4.29	344.7		
MAR 21 SEP 23		-5.64	5.34	496.5	-5.64	4.98	425.9	-5.64	4.55	357.0	-5.64	4.03	292.2	-5.64	3.41	234.1		
MAR 7 OCT 8		-5.28	4.92	402.3	-5.28	4.47	328.6	-5.28	3.94	258.8	-5.28	3.29	195.7	-5.28	2.51	141.8		
FEB 7 NOV 5		-4.96	4.52	321.1	-4.96	3.99	246.6	-4.96	3.34	178.4	-4.96	2.56	119.2	-4.96	1.60	71.6		
JAN 23 NOV 19		-4.62	4.18	258.2	-4.62	3.56	184.8	-4.45	2.81	119.7	-4.30	1.86	66.0	-4.07	.65	26.6		
JAN 10 DEC 3		-4.36	3.92	215.7	-4.22	3.24	144.2	-4.02	2.38	82.8	-3.71	1.27	35.1	-3.07	-.35	5.2		
DEC 22		-4.20	3.76	191.7	-4.02	3.03	121.8	-3.74	2.10	63.3	-3.29	.85	20.2	0.00	0.00	0.0		
		YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	
		221.977	.4223	202.457	.3852	182.960	.3481	164.402	.3128	147.772	.2811							
		60 PCT			70 PCT			80 PCT			90 PCT			100 PCT				
		THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	
		69.7	34.5				71.8	44.8				73.9	67.6	74.0	78.5	74.0	78.5	
JUN 22		-7.66	7.66	876.7	-7.66	7.66	837.3	-7.66	7.66	797.8	-7.66	7.66	759.4	-7.66	7.66	722.2	722.2	
JUN 1 JUL 12		-7.53	7.53	832.4	-7.53	7.53	790.9	-7.53	7.53	749.9	-7.53	7.53	710.1	-7.53	7.53	671.8	671.8	
MAY 18 JUL 27		-7.32	7.32	757.9	-7.32	7.32	713.2	-7.32	7.32	669.5	-7.32	7.32	627.6	-7.32	7.32	587.6	587.6	
MAY 3 AUG 10		-7.04	6.95	655.1	-7.04	6.90	606.2	-7.04	6.79	559.2	-7.04	6.52	514.9	-7.04	5.84	473.4	473.4	
APR 19 AUG 25		-6.72	5.79	535.2	-6.72	5.42	484.2	-6.72	4.92	437.1	-6.72	4.29	395.0	-6.72	3.58	358.3	358.3	
APR 4 SEP 9		-6.36	4.73	411.1	-6.36	4.18	360.9	-6.36	3.54	316.8	-6.36	2.83	279.6	-6.36	2.10	249.0	249.0	
MAR 21 SEP 23		-6.00	3.70	290.8	-6.00	3.01	244.3	-6.00	2.26	205.8	-6.00	1.49	175.3	-6.00	.76	151.7	151.7	
MAR 7 OCT 8		-5.64	2.67	184.3	-5.64	1.85	143.9	-5.64	.98	113.0	-5.64	.16	90.6	-5.64	-.58	74.8	74.8	
FEB 20 OCT 22		-5.28	1.61	98.5	-5.28	.61	65.5	-5.28	-.40	44.9	-5.28	-1.31	31.4	-5.28	-2.05	23.3	23.3	
FEB 7 NOV 5		-4.96	.45	37.0	-4.96	-.87	15.4	-4.96	-2.27	4.7	-4.96	-3.54	1.1	-4.96	-4.31	.3	.3	
JAN 23 NOV 19		-3.56	-1.04	3.7	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.0	
JAN 10 DEC 3		0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.0	
DEC 22		0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.0	
		YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	
		133.767	.2545	121.752	.2316	111.325	.2118	102.329	.1947	94.520	.1798							

NOTE - FOR ASPECTS WITH WEST COMPONENTS, THE TIME AND SIGN OF SR AND SS ARE REVERSED.

LATITUDE 44 N
ASPECT SSE - S

	10 PCT			20 PCT			SLOPE			30 PCT			40 PCT			50 PCT		
	THETA	ALPHA		THETA	ALPHA		THETA	ALPHA		THETA	ALPHA		THETA	ALPHA		THETA	ALPHA	
		SR	SS		LY	SR		SS	LY		SR	SS		LY	SR		SS	LY
JUN 22	-7.54	7.17	1021.6	-7.46	6.77	1013.6	-7.38	6.42	999.9	-7.32	6.13	981.2	-7.27	5.88	958.6	-7.22	5.63	935.0
JUN 12	-7.44	7.07	1004.2	-7.37	6.68	1000.6	-7.32	6.36	991.1	-7.27	6.08	976.2	-7.22	5.83	951.7	-7.17	5.58	928.3
MAY 18	-7.27	6.90	973.5	-7.24	6.55	977.3	-7.20	6.25	974.7	-7.15	5.97	960.2	-7.10	5.72	942.8	-7.05	5.47	924.9
MAY 3	-7.04	6.67	928.0	-7.00	6.36	942.0	-7.04	6.10	948.9	-7.00	5.87	949.2	-7.04	5.67	943.9	-7.04	5.67	943.9
APR 19	-6.72	6.41	868.2	-6.72	6.14	893.8	-6.72	5.92	911.8	-6.72	5.73	922.5	-6.72	5.56	926.9	-6.72	5.56	926.9
APR 4	-6.36	6.12	796.7	-6.36	5.90	834.1	-6.36	5.72	863.5	-6.36	5.57	885.2	-6.36	5.43	899.6	-6.36	5.43	899.6
MAR 21	-6.00	5.81	715.5	-6.00	5.66	763.9	-6.00	5.52	804.2	-6.00	5.41	836.2	-6.00	5.31	860.4	-6.00	5.31	860.4
MAR 7	-5.64	5.51	630.6	-5.64	5.41	688.3	-5.64	5.32	737.9	-5.64	5.24	778.9	-5.64	5.18	811.9	-5.64	5.18	811.9
FEB 20	-5.28	5.22	548.2	-5.28	5.17	612.9	-5.28	5.12	669.5	-5.28	5.09	717.8	-5.28	5.05	757.9	-5.28	5.05	757.9
FEB 7	-4.96	4.95	473.7	-4.96	4.95	542.9	-4.96	4.95	604.5	-4.96	4.94	659.2	-4.96	4.94	703.2	-4.96	4.94	703.2
JAN 23	-4.68	4.68	413.4	-4.68	4.68	485.0	-4.68	4.68	549.4	-4.68	4.68	606.0	-4.68	4.68	658.5	-4.68	4.68	658.5
JAN 10	-4.47	4.47	371.0	-4.47	4.47	443.4	-4.47	4.47	509.1	-4.47	4.47	567.1	-4.47	4.47	617.3	-4.47	4.47	617.3
DEC 22	-4.34	4.34	346.2	-4.34	4.34	418.8	-4.34	4.34	484.9	-4.34	4.34	543.5	-4.34	4.34	594.4	-4.34	4.34	594.4
JUN 22	-7.22	5.65	933.4	-7.18	5.46	906.6	-7.14	5.28	879.2	-7.11	5.13	852.1	-7.08	4.99	825.5	-7.08	4.99	825.5
JUN 12	-7.19	5.62	934.7	-7.16	5.43	910.6	-7.13	5.27	885.5	-7.10	5.12	860.4	-7.08	4.99	835.6	-7.08	4.99	835.6
MAY 18	-7.14	5.57	935.7	-7.12	5.40	916.1	-7.10	5.24	895.1	-7.09	5.11	873.5	-7.08	4.98	851.8	-7.08	4.98	851.8
MAY 3	-7.04	5.50	934.1	-7.04	5.34	921.0	-7.04	5.21	905.8	-7.04	5.09	889.2	-7.04	4.98	872.0	-7.04	4.98	872.0
APR 19	-6.72	5.41	925.8	-6.72	5.28	920.6	-6.72	5.16	912.4	-6.72	5.06	902.0	-6.72	4.97	890.3	-6.72	4.97	890.3
APR 4	-6.36	5.32	907.9	-6.36	5.21	911.1	-6.36	5.12	910.4	-6.36	5.04	906.8	-6.36	4.96	901.0	-6.36	4.96	901.0
MAR 21	-6.00	5.22	877.8	-6.00	5.14	889.4	-6.00	5.07	896.2	-6.00	5.01	899.4	-6.00	4.95	899.8	-6.00	4.95	899.8
MAR 7	-5.64	5.12	837.5	-5.64	5.07	856.7	-5.64	5.02	870.5	-5.64	4.98	880.0	-5.64	4.95	886.2	-5.64	4.95	886.2
FEB 20	-5.28	5.02	790.2	-5.28	5.00	815.8	-5.28	4.98	835.6	-5.28	4.96	850.6	-5.28	4.94	861.7	-5.28	4.94	861.7
FEB 7	-4.96	4.94	740.6	-4.96	4.94	771.1	-4.96	4.93	795.6	-4.96	4.93	819.9	-4.96	4.93	830.0	-4.96	4.93	830.0
JAN 23	-4.68	4.68	695.3	-4.68	4.68	728.1	-4.68	4.68	756.7	-4.68	4.68	778.0	-4.68	4.68	797.1	-4.68	4.68	797.1
JAN 10	-4.47	4.47	659.9	-4.47	4.47	695.5	-4.47	4.47	724.9	-4.47	4.47	749.0	-4.47	4.47	768.6	-4.47	4.47	768.6
DEC 22	-4.34	4.34	637.8	-4.34	4.34	674.2	-4.34	4.34	704.4	-4.34	4.34	729.3	-4.34	4.34	749.8	-4.34	4.34	749.8
	YEAR	R.I.	R.I.	YEAR	R.I.	R.I.	YEAR	R.I.	R.I.	YEAR	R.I.	R.I.	YEAR	R.I.	R.I.	YEAR	R.I.	R.I.
	304.763	.5798	.5798	307.594	.5852	.5852	308.959	.5878	.5878	309.197	.5883	.5883	308.587	.5871	.5871	308.587	.5871	.5871

NOTE - FOR ASPECTS WITH WEST COMPONENTS, THE TIME AND SIGN OF SR AND SS ARE REVERSED.

LATITUDE 44 N
ASPECT NE - NW

		SLOPE																								
		10 PCT					20 PCT					30 PCT					40 PCT					50 PCT				
		THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY
		47.9	6.0				51.3	12.8				54.2	20.3				56.5	28.4				58.1	36.7			
JUN 22		-7.66	7.52	1018.9			-7.66	7.34	1004.4			-7.66	7.12	982.0			-7.66	6.84	953.6			-7.66	6.50	921.2		
JUN 1 JUL 12		-7.53	7.36	993.1			-7.53	7.16	975.5			-7.53	6.91	950.6			-7.53	6.61	920.3			-7.53	6.24	886.8		
MAY 18 JUL 27		-7.32	7.12	948.7			-7.32	6.88	926.2			-7.32	6.59	897.3			-7.32	6.24	864.1			-7.32	5.84	828.8		
MAY 3 AUG 10		-7.04	6.80	885.1			-7.04	6.50	856.2			-7.04	6.16	822.4			-7.04	5.77	785.8			-7.04	5.32	748.5		
APR 19 AUG 25		-6.72	6.42	804.8			-6.72	6.07	769.0			-6.72	5.68	730.1			-6.72	5.24	690.3			-6.72	4.75	651.4		
APR 4 SEP 9		-6.36	6.02	712.8			-6.36	5.62	670.5			-6.36	5.17	627.2			-6.36	4.68	585.0			-6.36	4.16	545.4		
MAR 21 SEP 23		-6.00	5.60	613.2			-6.00	5.14	565.6			-6.00	4.64	519.2			-6.00	4.11	475.7			-6.00	3.55	436.7		
MAR 7 OCT 8		-5.64	5.18	513.6			-5.64	4.67	462.3			-5.64	4.12	414.2			-5.64	3.53	371.1			-5.64	2.94	333.8		
FEB 20 OCT 22		-5.28	4.78	420.9			-5.28	4.21	367.7			-5.28	3.61	319.7			-5.28	2.98	278.2			-5.28	2.35	243.8		
FEB 7 NOV 5		-4.96	4.40	340.5			-4.96	3.78	287.1			-4.96	3.12	240.5			-4.96	2.44	201.7			-4.96	1.78	170.7		
JAN 23 NOV 19		-4.68	4.08	277.8			-4.68	3.41	225.4			-4.68	2.70	180.9			-4.68	1.97	145.1			-4.68	1.27	117.8		
JAN 10 DEC 3		-4.47	3.83	235.2			-4.47	3.13	184.0			-4.47	2.37	141.6			-4.47	1.60	108.6			-4.47	0.86	86.2		
DEC 22		-4.34	3.68	211.0			-4.34	2.95	160.8			-4.34	2.17	119.9			-4.34	1.37	88.7			-4.34	0.60	66.3		
		YEAR	R.I.	YEAR	R.I.	YEAR	YEAR	R.I.	YEAR	R.I.	YEAR	YEAR	R.I.	YEAR	R.I.	YEAR	YEAR	R.I.	YEAR	R.I.	YEAR	YEAR	YEAR	R.I.	YEAR	R.I.
		226.458	4309	211.899	4032	197.612	197.612	43760	184.160	43504	171.946	171.946	43271													

		SLOPE																								
		60 PCT					70 PCT					80 PCT					90 PCT					100 PCT				
		THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY
		59.0	45.0				59.4	52.8				59.3	60.0				58.9	66.5				58.3	72.1			
JUN 22		-7.66	6.10	887.2			-7.66	5.63	853.1			-7.66	5.14	820.6			-7.66	4.65	790.6			-7.66	4.18	763.2		
JUN 1 JUL 12		-7.53	5.82	852.1			-7.53	5.35	817.9			-7.53	4.86	785.7			-7.53	4.37	756.2			-7.53	3.91	729.4		
MAY 18 JUL 27		-7.32	5.39	793.2			-7.32	4.90	759.1			-7.32	4.42	727.5			-7.32	3.94	698.9			-7.32	3.50	673.3		
MAY 3 AUG 10		-7.04	4.85	712.3			-7.04	4.35	678.5			-7.04	3.87	647.9			-7.04	3.41	620.8			-7.04	2.98	596.9		
APR 19 AUG 25		-6.72	4.25	615.1			-6.72	3.75	582.3			-6.72	3.26	553.4			-6.72	2.81	528.3			-6.72	2.41	506.5		
APR 4 SEP 9		-6.36	3.63	509.9			-6.36	3.12	478.8			-6.36	2.64	452.1			-6.36	2.20	429.6			-6.36	1.80	410.4		
MAR 21 SEP 23		-6.00	3.00	403.0			-6.00	2.48	374.4			-6.00	2.00	350.7			-6.00	1.57	331.1			-6.00	1.19	314.9		
MAR 7 OCT 8		-5.64	2.37	302.8			-5.64	1.84	277.5			-5.64	1.36	257.2			-5.64	0.94	240.9			-5.64	0.58	227.7		
FEB 20 OCT 22		-5.28	1.75	216.2			-5.28	1.21	194.6			-5.28	0.73	177.9			-5.28	0.32	164.9			-5.28	-0.02	154.7		
FEB 7 NOV 5		-4.96	1.16	147.0			-4.96	0.60	129.2			-4.96	0.13	116.0			-4.96	-0.27	106.2			-4.96	-0.60	98.7		
JAN 23 NOV 19		-4.68	0.62	97.7			-4.68	0.05	83.4			-4.68	-0.42	73.2			-4.68	-0.81	65.9			-4.68	-1.12	60.6		
JAN 10 DEC 3		-4.47	0.19	67.1			-4.47	-0.39	55.4			-4.47	-0.86	47.5			-4.47	-1.23	42.0			-4.47	-1.53	38.2		
DEC 22		-4.34	-0.09	51.1			-4.34	-0.68	41.0			-4.34	-1.15	34.4			-4.34	-1.51	30.1			-4.34	-1.79	27.0		
		YEAR	R.I.	YEAR	R.I.	YEAR	YEAR	R.I.	YEAR	R.I.	YEAR	YEAR	R.I.	YEAR	R.I.	YEAR	YEAR	R.I.	YEAR	R.I.	YEAR	YEAR	YEAR	R.I.	YEAR	R.I.
		161.165	3066	151.819	2888	143.828	143.828	2736	137.040	2607	131.234	131.234	2497													

NOTE - FOR ASPECTS WITH WEST COMPONENTS, THE TIME AND SIGN OF SR AND SS ARE REVERSED.

LATITUDE 44 N
ASPECT SE - SW

		10 PCT			20 PCT			30 PCT			40 PCT			50 PCT		
		THETA	ALPHA	LY	THETA	ALPHA	LY	THETA	ALPHA	LY	THETA	ALPHA	LY	THETA	ALPHA	LY
		39.8	5.3		35.5	9.8		31.3	13.8		27.1	17.2		23.2	20.1	
		SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY
JUN 22		-7.66	7.07	1022.5	-7.66	6.55	1017.1	-7.66	6.10	1007.7	-7.66	5.71	994.4	-7.66	5.37	978.0
FEB 20	OCT 22	-7.53	6.96	1004.0	-7.53	6.46	1002.2	-7.53	6.03	996.1	-7.53	5.65	985.9	-7.53	5.32	972.0
MAY 18	JUL 27	-7.32	6.78	971.5	-7.32	6.31	975.5	-7.32	5.90	974.9	-7.32	5.55	969.8	-7.32	5.23	960.8
MAY 3	AUG 10	-7.04	6.55	923.6	-7.04	6.11	935.5	-7.04	5.73	942.2	-7.04	5.40	944.0	-7.04	5.12	941.2
APR 19	AUG 25	-6.72	6.27	861.0	-6.72	5.87	881.7	-6.72	5.53	896.9	-6.72	5.23	906.6	-6.72	4.97	911.1
APR 4	SEP 9	-6.36	5.96	786.6	-6.36	5.61	816.3	-6.36	5.31	840.1	-6.36	5.05	857.9	-6.36	4.82	870.0
MAR 21	SEP 23	-6.00	5.65	702.8	-6.00	5.35	740.7	-6.00	5.08	772.6	-6.00	4.86	798.0	-6.00	4.66	817.3
MAR 7	OCT 8	-5.64	5.33	615.7	-5.64	5.08	660.5	-5.64	4.85	699.0	-5.64	4.66	731.0	-5.64	4.50	756.5
FEB 20	OCT 22	-5.28	5.03	531.7	-5.28	4.82	581.4	-5.28	4.63	625.0	-5.28	4.48	661.9	-5.28	4.34	692.3
FEB 7	NOV 5	-4.96	4.75	456.1	-4.96	4.58	509.0	-4.96	4.43	555.8	-4.96	4.31	596.2	-4.96	4.20	629.9
JAN 23	NOV 19	-4.68	4.51	395.2	-4.68	4.38	449.6	-4.68	4.26	498.3	-4.68	4.17	540.6	-4.68	4.08	576.5
JAN 10	DEC 3	-4.47	4.34	352.6	-4.47	4.23	407.6	-4.47	4.14	457.0	-4.47	4.06	500.2	-4.47	3.99	537.2
DEC 22		-4.34	4.23	327.9	-4.34	4.14	382.9	-4.34	4.06	432.5	-4.34	4.00	476.1	-4.34	3.94	513.5
		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.	
		253.592	.4825		264.927	.5040		274.274	.5218		281.555	.5357		286.865	.5458	
		60 PCT			70 PCT			80 PCT			90 PCT			100 PCT		
		THETA	ALPHA	LY	THETA	ALPHA	LY	THETA	ALPHA	LY	THETA	ALPHA	LY	THETA	ALPHA	LY
		19.5	22.7		16.1	25.0		13.0	27.0		10.1	28.7		7.6	30.3	
		SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY
JUN 22		-7.66	5.08	959.3	-7.66	4.82	939.0	-7.66	4.59	918.2	-7.66	4.38	897.2	-7.66	4.20	876.5
JUN 1	JUL 12	-7.53	5.03	956.0	-7.53	4.78	938.0	-7.53	4.56	919.1	-7.53	4.36	899.9	-7.53	4.19	880.7
MAY 18	JUL 27	-7.32	4.96	948.8	-7.32	4.72	934.5	-7.32	4.51	918.8	-7.32	4.32	902.4	-7.32	4.16	885.7
MAY 3	AUG 10	-7.04	4.86	934.8	-7.04	4.64	925.6	-7.04	4.45	918.4	-7.04	4.28	901.9	-7.04	4.12	888.7
APR 19	AUG 25	-6.72	4.75	911.3	-6.72	4.55	908.0	-6.72	4.37	902.1	-6.72	4.22	894.3	-6.72	4.08	885.2
APR 4	SEP 9	-6.36	4.62	877.1	-6.36	4.44	880.0	-6.36	4.29	875.7	-6.36	4.15	876.8	-6.36	4.03	872.2
MAR 21	SEP 23	-6.00	4.49	831.0	-6.00	4.34	840.0	-6.00	4.20	845.1	-6.00	4.09	847.2	-6.00	3.98	847.1
MAR 7	OCT 8	-5.64	4.35	776.0	-5.64	4.23	790.4	-5.64	4.12	800.6	-5.64	4.02	807.2	-5.64	3.93	811.2
FEB 20	OCT 22	-5.28	4.23	716.5	-5.28	4.12	735.4	-5.28	4.03	749.6	-5.28	3.95	760.0	-5.28	3.88	767.5
FEB 7	NOV 5	-4.96	4.11	657.5	-4.96	4.03	679.7	-4.96	3.96	691.0	-4.96	3.89	710.3	-4.96	3.84	720.5
JAN 23	NOV 19	-4.68	4.01	606.2	-4.68	3.95	630.5	-4.68	3.89	650.0	-4.68	3.85	665.3	-4.68	3.80	677.4
JAN 10	DEC 3	-4.47	3.94	568.1	-4.47	3.89	593.6	-4.47	3.85	616.3	-4.47	3.81	630.9	-4.47	3.78	644.2
DEC 22		-4.34	3.90	545.0	-4.34	3.85	571.1	-4.34	3.82	592.4	-4.34	3.79	609.6	-4.34	3.76	623.5
		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.	
		290.411	.5525		292.478	.5565		293.351	.5581		293.304	.5580		292.566	.5566	

NOTE - FOR ASPECTS WITH WEST COMPONENTS, THE TIME AND SIGN OF SR AND SS ARE REVERSED.

LATITUDE 44 N
ASPECT ENE - MNW

		10 PCT				20 PCT				SLOPE				30 PCT				40 PCT				50 PCT						
		THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY		
JUN 22		-7.66	7.27	1020.0	-7.66	6.84	1009.2	-7.66	6.37	993.0	-7.66	5.88	973.2	-7.66	5.38	951.6	-7.66	5.38	951.6	-7.66	5.38	951.6	-7.66	5.38	951.6	-7.66	5.38	951.6
JUN 1 JUL 12		-7.53	7.14	996.0	-7.53	6.70	983.9	-7.53	6.22	966.9	-7.53	5.73	946.7	-7.53	5.23	925.1	-7.53	5.23	925.1	-7.53	5.23	925.1	-7.53	5.23	925.1	-7.53	5.23	925.1
MAY 18 JUL 27		-7.32	6.91	954.5	-7.32	6.46	940.2	-7.32	5.97	922.0	-7.32	5.48	901.3	-7.32	4.99	879.7	-7.32	4.99	879.7	-7.32	4.99	879.7	-7.32	4.99	879.7	-7.32	4.99	879.7
MAY 3 AUG 10		-7.04	6.61	894.7	-7.04	6.14	877.7	-7.04	5.65	857.9	-7.04	5.15	836.7	-7.04	4.66	815.3	-7.04	4.66	815.3	-7.04	4.66	815.3	-7.04	4.66	815.3	-7.04	4.66	815.3
APR 19 AUG 25		-6.72	6.26	818.6	-6.72	5.77	798.8	-6.72	5.27	777.4	-6.72	4.76	755.8	-6.72	4.28	734.8	-6.72	4.28	734.8	-6.72	4.28	734.8	-6.72	4.28	734.8	-6.72	4.28	734.8
APR 4 SEP 9		-6.36	5.88	730.8	-6.36	5.38	708.3	-6.36	4.86	685.8	-6.36	4.35	664.1	-6.36	3.87	643.9	-6.36	3.87	643.9	-6.36	3.87	643.9	-6.36	3.87	643.9	-6.36	3.87	643.9
MAR 21 SEP 23		-6.00	5.49	634.9	-6.00	4.97	610.4	-6.00	4.44	587.1	-6.00	3.93	565.7	-6.00	3.45	546.7	-6.00	3.45	546.7	-6.00	3.45	546.7	-6.00	3.45	546.7	-6.00	3.45	546.7
MAR 7 OCT 8		-5.64	5.10	538.2	-5.64	4.56	512.2	-5.64	4.02	488.8	-5.64	3.50	468.3	-5.64	3.03	450.8	-5.64	3.03	450.8	-5.64	3.03	450.8	-5.64	3.03	450.8	-5.64	3.03	450.8
FEB 20 OCT 22		-5.28	4.73	447.4	-5.28	4.16	420.9	-5.28	3.61	398.0	-5.28	3.09	378.7	-5.28	2.62	362.8	-5.28	2.62	362.8	-5.28	2.62	362.8	-5.28	2.62	362.8	-5.28	2.62	362.8
FEB 7 NOV 5		-4.96	4.38	368.0	-4.96	3.79	341.6	-4.96	3.23	319.6	-4.96	2.71	301.8	-4.96	2.24	287.6	-4.96	2.24	287.6	-4.96	2.24	287.6	-4.96	2.24	287.6	-4.96	2.24	287.6
JAN 23 NOV 19		-4.68	4.08	305.7	-4.68	3.47	279.8	-4.68	2.90	258.9	-4.68	2.38	242.5	-4.68	1.92	229.8	-4.68	1.92	229.8	-4.68	1.92	229.8	-4.68	1.92	229.8	-4.68	1.92	229.8
JAN 10 DEC 3		-4.47	3.85	262.9	-4.47	3.24	237.7	-4.47	2.66	217.9	-4.47	2.13	202.6	-4.47	1.67	191.1	-4.47	1.67	191.1	-4.47	1.67	191.1	-4.47	1.67	191.1	-4.47	1.67	191.1
DEC 22		-4.34	3.71	238.5	-4.34	3.09	213.8	-4.34	2.50	194.6	-4.34	1.98	180.1	-4.34	1.52	169.3	-4.34	1.52	169.3	-4.34	1.52	169.3	-4.34	1.52	169.3	-4.34	1.52	169.3
		YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	
		232.992	.4433	225.272	.4286	217.772	.4143	210.716	.4009	204.240	.3886																	
		60 PCT				70 PCT				SLOPE				80 PCT				90 PCT				100 PCT						
		THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY		
JUN 22		-7.66	4.91	929.6	-7.66	4.46	907.9	-7.66	4.05	887.3	-7.66	3.68	868.0	-7.66	3.36	850.0	-7.66	3.36	850.0	-7.66	3.36	850.0	-7.66	3.36	850.0	-7.66	3.36	850.0
JUN 1 JUL 12		-7.53	4.76	903.3	-7.53	4.32	882.0	-7.53	3.92	861.9	-7.53	3.56	843.1	-7.53	3.23	825.6	-7.53	3.23	825.6	-7.53	3.23	825.6	-7.53	3.23	825.6	-7.53	3.23	825.6
MAY 18 JUL 27		-7.32	4.52	858.3	-7.32	4.09	837.7	-7.32	3.69	818.4	-7.32	3.34	800.5	-7.32	3.03	783.9	-7.32	3.03	783.9	-7.32	3.03	783.9	-7.32	3.03	783.9	-7.32	3.03	783.9
MAY 3 AUG 10		-7.04	4.20	794.6	-7.04	3.78	775.0	-7.04	3.40	756.8	-7.04	3.06	740.2	-7.04	2.76	724.9	-7.04	2.76	724.9	-7.04	2.76	724.9	-7.04	2.76	724.9	-7.04	2.76	724.9
APR 19 AUG 25		-6.72	3.83	715.1	-6.72	3.42	696.9	-6.72	3.05	680.3	-6.72	2.73	665.2	-6.72	2.44	651.4	-6.72	2.44	651.4	-6.72	2.44	651.4	-6.72	2.44	651.4	-6.72	2.44	651.4
APR 4 SEP 9		-6.36	3.43	625.5	-6.36	3.03	608.9	-6.36	2.68	594.0	-6.36	2.37	580.7	-6.36	2.10	568.7	-6.36	2.10	568.7	-6.36	2.10	568.7	-6.36	2.10	568.7	-6.36	2.10	568.7
MAR 21 SEP 23		-6.00	3.02	529.9	-6.00	2.63	515.2	-6.00	2.29	502.3	-6.00	2.00	490.9	-6.00	1.74	480.8	-6.00	1.74	480.8	-6.00	1.74	480.8	-6.00	1.74	480.8	-6.00	1.74	480.8
MAR 7 OCT 8		-5.64	2.61	435.8	-5.64	2.23	423.0	-5.64	1.91	412.1	-5.64	1.63	402.7	-5.64	1.39	394.4	-5.64	1.39	394.4	-5.64	1.39	394.4	-5.64	1.39	394.4	-5.64	1.39	394.4
FEB 20 OCT 22		-5.28	2.21	349.7	-5.28	1.85	338.9	-5.28	1.54	329.8	-5.28	1.27	322.2	-5.28	1.04	315.5	-5.28	1.04	315.5	-5.28	1.04	315.5	-5.28	1.04	315.5	-5.28	1.04	315.5
FEB 7 NOV 5		-4.96	1.84	276.3	-4.96	1.49	267.2	-4.96	1.19	259.8	-4.96	.94	253.7	-4.96	.73	248.5	-4.96	.73	248.5	-4.96	.73	248.5	-4.96	.73	248.5	-4.96	.73	248.5
JAN 23 NOV 19		-4.68	1.52	220.1	-4.68	1.18	212.4	-4.68	.90	206.3	-4.68	.66	201.4	-4.68	.46	197.3	-4.68	.46	197.3	-4.68	.46	197.3	-4.68	.46	197.3	-4.68	.46	197.3
JAN 10 DEC 3		-4.47	1.28	182.4	-4.47	.95	175.8	-4.47	.67	170.6	-4.47	.45	166.5	-4.47	.25	163.0	-4.47	.25	163.0	-4.47	.25	163.0	-4.47	.25	163.0	-4.47	.25	163.0
DEC 22		-4.34	1.13	161.3	-4.34	.81	155.2	-4.34	.54	150.6	-4.34	.32	146.9	-4.34	.13	143.9	-4.34	.13	143.9	-4.34	.13	143.9	-4.34	.13	143.9	-4.34	.13	143.9
		YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	
		198.383	.3774	193.121	.3674	188.412	.3585	184.199	.3505	180.389	.3432																	

NOTE - FOR ASPECTS WITH WEST COMPONENTS, THE TIME AND SIGN OF SR AND SS ARE REVERSED.

LATITUDE 44 N
ASPECT ESE - NSW

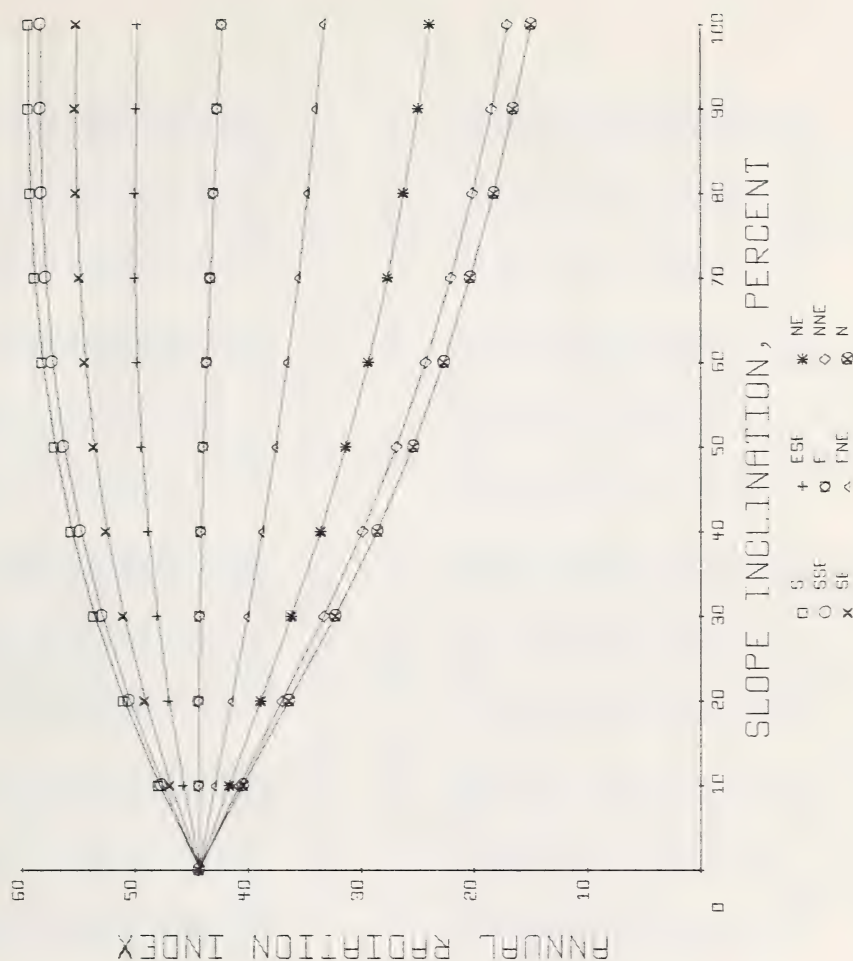
	10 PCT					20 PCT					SLOPE					30 PCT					40 PCT					50 PCT				
	THETA		ALPHA		R.i.	THETA		ALPHA		R.i.	THETA		ALPHA		R.i.	THETA		ALPHA		R.i.	THETA		ALPHA		R.i.					
	41.6	7.1	38.8	13.5		35.9	19.1	32.9	24.1		29.9	28.5																		
SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY							
JUN 22	-7.66	7.04	1022.5	-7.66	6.47	1018.0	-7.66	5.95	1010.4	-7.66	5.48	1000.0	-7.66	5.07	987.4	-7.66	4.62	974.1	-7.66	4.16	960.7	-7.66	3.71	947.3						
JUN 1	-7.53	6.93	1002.4	-7.53	6.37	1000.0	-7.53	5.86	994.5	-7.53	5.40	986.1	-7.53	4.94	973.6	-7.53	4.48	961.1	-7.53	4.02	948.6	-7.53	3.57	936.1						
JUN 18	-7.32	6.74	967.3	-7.32	6.20	968.3	-7.32	5.71	966.3	-7.32	5.27	961.2	-7.32	4.81	950.7	-7.32	4.35	938.2	-7.32	3.89	925.7	-7.32	3.43	913.2						
MAY 3	-7.04	6.48	915.9	-7.04	5.97	921.6	-7.04	5.50	924.1	-7.04	5.08	923.5	-7.04	4.62	910.8	-7.04	4.16	900.3	-7.04	3.70	887.8	-7.04	3.24	875.3						
MAY 10	-6.72	6.19	849.2	-6.72	5.70	850.3	-6.72	5.26	868.0	-6.72	4.87	872.4	-6.72	4.41	880.9	-6.72	3.95	889.4	-6.72	3.49	897.9	-6.72	3.03	906.4						
APR 19	-6.36	5.86	770.8	-6.36	5.41	787.2	-6.36	5.00	800.2	-6.36	4.64	809.7	-6.36	4.28	818.6	-6.36	3.92	827.5	-6.36	3.56	836.4	-6.36	3.20	845.3						
APR 4	-6.00	5.53	683.3	-6.00	5.10	704.5	-6.00	4.72	722.5	-6.00	4.39	736.7	-6.00	4.02	750.9	-6.00	3.65	765.1	-6.00	3.28	779.3	-6.00	2.91	793.5						
MAR 21	-5.64	5.19	593.2	-5.64	4.80	618.4	-5.64	4.45	640.4	-5.64	4.15	658.6	-5.64	3.80	672.9	-5.64	3.45	687.1	-5.64	3.10	699.1	-5.64	2.75	711.1						
MAR 7	-5.28	4.87	507.0	-5.28	4.51	535.1	-5.28	4.19	560.0	-5.28	3.92	581.1	-5.28	3.62	598.4	-5.28	3.27	612.6	-5.28	2.92	626.8	-5.28	2.57	641.0						
OCT 22	-4.96	4.57	430.1	-4.96	4.24	459.9	-4.96	3.95	485.6	-4.96	3.74	426.9	-4.96	3.52	451.0	-4.96	3.30	471.3	-4.96	3.08	490.5	-4.96	2.86	509.7						
FEB 7	-4.68	4.32	368.7	-4.68	4.01	399.2	-4.68	3.74	425.9	-4.68	3.52	451.0	-4.68	3.30	471.3	-4.68	3.08	490.5	-4.68	2.86	509.7	-4.68	2.64	528.9						
JAN 23	-4.47	4.13	325.9	-4.47	3.84	356.7	-4.47	3.59	384.6	-4.47	3.39	409.1	-4.47	3.21	430.0	-4.47	3.03	450.9	-4.47	2.85	470.1	-4.47	2.67	489.3						
JAN 10	-4.34	4.02	301.2	-4.34	3.74	331.9	-4.34	3.50	359.9	-4.34	3.30	384.5	-4.34	3.12	405.6	-4.34	2.94	426.5	-4.34	2.76	447.4	-4.34	2.58	468.3						
DEC 22																														
JUN 22	-7.66	4.70	973.0	-7.66	4.38	957.5	-7.66	4.10	941.4	-7.66	3.86	925.2	-7.66	3.64	909.1	-7.66	3.42	892.9	-7.66	3.20	876.7	-7.66	2.98	860.5						
JUN 1	-7.53	4.64	962.7	-7.53	4.33	948.7	-7.53	4.06	934.0	-7.53	3.82	919.0	-7.53	3.59	903.9	-7.53	3.37	888.7	-7.53	3.15	873.5	-7.53	2.93	858.3						
MAY 18	-7.32	4.54	943.6	-7.32	4.24	932.1	-7.32	3.97	919.7	-7.32	3.74	906.7	-7.32	3.52	893.4	-7.32	3.30	880.1	-7.32	3.08	866.8	-7.32	2.86	853.5						
MAY 3	-7.04	4.40	913.7	-7.04	4.11	905.7	-7.04	3.86	896.2	-7.04	3.65	886.0	-7.04	3.43	875.1	-7.04	3.21	860.8	-7.04	2.99	846.5	-7.04	2.77	832.2						
APR 19	-6.72	4.23	871.7	-6.72	3.96	867.6	-6.72	3.73	861.8	-6.72	3.53	854.7	-6.72	3.31	847.7	-6.72	3.09	840.8	-6.72	2.87	833.9	-6.72	2.65	827.0						
APR 4	-6.36	4.04	818.4	-6.36	3.80	818.4	-6.36	3.59	816.3	-6.36	3.40	812.6	-6.36	3.20	807.7	-6.36	2.99	802.9	-6.36	2.78	800.0	-6.36	2.57	797.1						
MAR 21	-6.00	3.85	754.1	-6.00	3.63	758.1	-6.00	3.44	759.6	-6.00	3.27	759.2	-6.00	3.12	757.4	-6.00	2.97	755.9	-6.00	2.82	754.4	-6.00	2.67	752.9						
MAR 7	-5.64	3.66	683.5	-5.64	3.46	691.0	-5.64	3.29	695.7	-5.64	3.14	698.3	-5.64	3.01	699.1	-5.64	2.88	697.6	-5.64	2.75	696.1	-5.64	2.62	694.6						
FEB 20	-5.28	3.47	611.9	-5.28	3.30	622.0	-5.28	3.14	628.3	-5.28	3.01	634.3	-5.28	2.89	637.4	-5.28	2.76	639.5	-5.28	2.64	637.6	-5.28	2.52	635.7						
FEB 7	-4.96	3.31	544.4	-4.96	3.15	556.5	-4.96	3.01	565.7	-4.96	2.90	572.5	-4.96	2.80	577.3	-4.96	2.70	582.1	-4.96	2.60	586.9	-4.96	2.50	591.7						
JAN 23	-4.68	3.16	487.9	-4.68	3.02	501.3	-4.68	2.90	511.7	-4.68	2.80	519.6	-4.68	2.70	525.6	-4.68	2.60	530.4	-4.68	2.50	535.2	-4.68	2.40	540.0						
JAN 10	-4.47	3.06	447.2	-4.47	2.93	461.2	-4.47	2.82	472.3	-4.47	2.73	480.9	-4.47	2.64	487.6	-4.47	2.55	494.3	-4.47	2.46	501.0	-4.47	2.37	507.7						
DEC 22	-4.34	3.00	423.0	-4.34	2.88	437.3	-4.34	2.77	448.7	-4.34	2.68	457.7	-4.34	2.60	464.4	-4.34	2.52	471.1	-4.34	2.44	477.8	-4.34	2.36	484.5						
JUN 22	-7.66	4.70	973.0	-7.66	4.38	957.5	-7.66	4.10	941.4	-7.66	3.86	925.2	-7.66	3.64	909.1	-7.66	3.42	892.9	-7.66	3.20	876.7	-7.66	2.98	860.5						
JUN 1	-7.53	4.64	962.7	-7.53	4.33	948.7	-7.53	4.06	934.0	-7.53	3.82	919.0	-7.53	3.59	903.9	-7.53	3.37	888.7	-7.53	3.15	873.5	-7.53	2.93	858.3						
MAY 18	-7.32	4.54	943.6	-7.32	4.24	932.1	-7.32	3.97	919.7	-7.32	3.74	906.7	-7.32	3.52	893.4	-7.32	3.30	880.1	-7.32	3.08	866.8	-7.32	2.86	853.5						
MAY 3	-7.04	4.40	913.7	-7.04	4.11	905.7	-7.04	3.86	896.2	-7.04	3.65	886.0	-7.04	3.43	875.1	-7.04	3.21	860.8	-7.04	2.99	846.5	-7.04	2.77	832.2						
APR 19	-6.72	4.23	871.7	-6.72	3.96	867.6	-6.72	3.73	861.8	-6.72	3.53	854.7	-6.72	3.31	847.7	-6.72	3.09	840.8	-6.72	2.87	833.9	-6.72	2.65	827.0						
APR 4	-6.36	4.04	818.4	-6.36	3.80	818.4	-6.36	3.59	816.3	-6.36	3.40	812.6	-6.36	3.20	807.7	-6.36	2.99	802.9	-6.36	2.78	800.0	-6.36	2.57	797.1						
MAR 21	-6.00	3.85	754.1	-6.00	3.63	758.1	-6.00	3.44	759.6	-6.00	3.27	759.2	-6.00	3.12	757.4	-6.00	2.97	755.9	-6.00	2.82	754.4	-6.00	2.67	752.9						
MAR 7	-5.64	3.66	683.5	-5.64	3.46	691.0	-5.64	3.29	695.7	-5.64	3.14	698.3	-5.64	3.01	699.1	-5.64	2.88	697.6	-5.64	2.75	696.1	-5.64	2.62	694.6						
FEB 20	-5.28	3.47	611.9	-5.28	3.30	622.0	-5.28	3.14	628.3	-5.28	3.01	634.3	-5.28	2.89	637.4	-5.28	2.76	639.5	-5.28	2.64	637.6	-5.28	2.52	635.7						
FEB 7	-4.96	3.31	544.4	-4.96	3.15	556.5	-4.96	3.01	565.7	-4.96	2.90	572.5	-4.96	2.80	577.3	-4.96	2.70	582.1	-4.96	2.60	586.9	-4.96	2.50	591.7						
JAN 23	-4.68	3.16	487.9	-4.68	3.02	501.3	-4.68	2.90	511.7	-4.68	2.80	519.6	-4.68	2.70	525.6	-4.68	2.60	530.4	-4.68	2.50	535.2	-4.68	2.40	540.0						
JAN 10	-4.47	3.06	447.2	-4.47	2.93	461.2	-4.47	2.82	472.3	-4.47	2.73	480.9	-4.47	2.64	487.6	-4.47	2.55	494.3	-4.47	2.46	501.0	-4.47	2.37	507.7						
DEC 22	-4.34	3.00	423.0	-4.34	2.88	437.3	-4.34	2.77	448.7	-4.34	2.68	457.7	-4.34	2.60	464.4	-4.34	2.52	471.1	-4.34	2.44	477.8	-4.34	2.36	484.5						
JUN 22	-7.66	4.70	973.0	-7.66	4.38	957.5	-7.66	4.10	941.4	-7.66	3.86	925.2	-7.66	3.64	909.1	-7.66	3.42	892.9	-7.66	3.20	876.7	-7.66	2.98	860.5						
JUN 1	-7.53	4.64	962.7	-7.53	4.33	948.7	-7.53	4.06	934.0	-7.53	3.82	919.0	-7.53	3.59	903.9	-7.53	3.37	888.7	-7.53	3.15	873.5	-7.53	2.93	858.3						
MAY 18	-7.32	4.54	943.6	-7.32	4.24	932.1	-7.32	3.97	919.7	-7.32	3.74	906.7	-7.32	3.52	893.4	-7.32	3.30	880.1	-7.32	3.08	866.8	-7.32	2.86	853.5						
MAY 3	-7.04	4.40	913.7	-7.04	4.11	905.7	-7.04	3.86	896.2	-7.04	3.65	886.0	-7.04	3.43	875.1	-7.04	3.21	860.8	-7.04	2.99	846.5	-7.04	2.77	832.2						
APR 19	-6.72	4.23	871.7	-6.72	3.96	867.6	-6.72	3.73	861.8	-6.72	3.53	854.7	-6.72	3.31	847.7	-6.72	3.09	840.8	-6.72	2.87	833.9	-6.72	2.65	827.0						
APR 4	-6.36	4.04	818.4	-6.36	3.80	818.4	-6.36	3.59	816.3	-6.36	3.40	812.6	-6.36	3.20	807.7	-6.36	2.99	802.9	-6.36	2.78	800.0	-6.36	2.57	797.1						
MAR 21	-6.00	3.85.																												

LATITUDE 44 N
ASPECT E - W

	SLOPE										SLOPE										SLOPE									
	10 PCT					20 PCT					30 PCT					40 PCT					50 PCT					60 PCT				
	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY
JUN 22	-7.66	7.11	1021.6	-7.66	6.55	1014.9	-7.66	6.01	1004.8	-7.66	5.50	992.4	-7.66	5.00	980.0	-7.66	4.50	967.6	-7.66	4.00	955.2	-7.66	3.50	942.8	-7.66	3.00	930.4	-7.66	2.50	918.0
JUN 1 JUL 12	-7.53	6.98	995.5	-7.53	6.43	993.3	-7.53	5.90	984.0	-7.53	5.39	972.4	-7.53	4.88	960.0	-7.53	4.37	947.6	-7.53	3.86	935.2	-7.53	3.35	922.8	-7.53	2.84	910.4	-7.53	2.33	898.0
MAY 18 JUL 27	-7.32	6.78	961.2	-7.32	6.23	955.8	-7.32	5.71	946.6	-7.32	5.20	934.0	-7.32	4.69	921.6	-7.32	4.18	909.2	-7.32	3.67	896.8	-7.32	3.16	884.4	-7.32	2.65	872.0	-7.32	2.14	859.6
MAY 3 AUG 10	-7.04	6.50	905.7	-7.04	5.97	901.3	-7.04	5.45	894.7	-7.04	4.93	883.2	-7.04	4.42	871.8	-7.04	3.91	860.4	-7.04	3.40	849.0	-7.04	2.89	837.6	-7.04	2.38	826.2	-7.04	1.87	814.8
APR 19 AUG 25	-6.72	6.18	834.3	-6.72	5.65	831.3	-6.72	5.13	826.5	-6.72	4.61	814.0	-6.72	4.10	802.6	-6.72	3.59	791.2	-6.72	3.08	779.8	-6.72	2.57	768.4	-6.72	2.06	757.0	-6.72	1.55	745.6
APR 4 SEP 9	-6.36	5.83	751.3	-6.36	5.31	749.5	-6.36	4.80	740.8	-6.36	4.29	729.4	-6.36	3.78	718.0	-6.36	3.27	706.6	-6.36	2.76	695.2	-6.36	2.25	683.8	-6.36	1.74	672.4	-6.36	1.23	661.0
MAR 21 SEP 23	-6.00	5.47	659.6	-6.00	4.96	659.2	-6.00	4.45	658.3	-6.00	3.94	657.4	-6.00	3.43	656.5	-6.00	2.92	655.6	-6.00	2.41	654.7	-6.00	1.90	653.8	-6.00	1.39	652.9	-6.00	0.88	652.0
MAR 7 OCT 8	-5.64	5.11	566.1	-5.64	4.61	566.9	-5.64	4.11	567.7	-5.64	3.61	568.5	-5.64	3.11	569.3	-5.64	2.61	570.1	-5.64	2.11	570.9	-5.64	1.61	571.7	-5.64	1.11	572.5	-5.64	0.61	573.3
FEB 20 OCT 22	-5.28	4.76	477.6	-5.28	4.27	479.3	-5.28	3.83	481.4	-5.28	3.39	484.0	-5.28	2.95	486.6	-5.28	2.51	489.2	-5.28	2.07	491.8	-5.28	1.63	494.4	-5.28	1.19	497.0	-5.28	0.75	499.6
FEB 7 NOV 5	-4.96	4.44	399.4	-4.96	3.96	401.8	-4.96	3.53	404.9	-4.96	3.10	408.0	-4.96	2.67	411.1	-4.96	2.24	414.2	-4.96	1.81	417.3	-4.96	1.38	420.4	-4.96	0.95	423.5	-4.96	0.52	426.6
JAN 23 NOV 19	-4.68	4.16	337.4	-4.68	3.69	340.3	-4.68	3.28	344.0	-4.68	2.85	347.6	-4.68	2.43	351.2	-4.68	2.00	354.8	-4.68	1.58	358.4	-4.68	1.15	362.0	-4.68	0.73	365.6	-4.68	0.30	369.2
JAN 10 DEC 3	-4.47	3.86	294.6	-4.47	3.49	297.7	-4.47	3.09	301.8	-4.47	2.67	305.4	-4.47	2.25	309.0	-4.47	1.83	312.6	-4.47	1.41	316.2	-4.47	0.99	319.8	-4.47	0.57	323.4	-4.47	0.15	327.0
DEC 22	-4.34	3.83	270.0	-4.34	3.37	273.2	-4.34	2.97	277.5	-4.34	2.57	281.9	-4.34	2.17	286.3	-4.34	1.77	290.7	-4.34	1.37	295.1	-4.34	0.97	299.5	-4.34	0.57	303.9	-4.34	0.17	308.3
JUN 22	-7.66	4.60	963.2	-7.66	4.22	947.7	-7.66	3.88	932.2	-7.66	3.59	917.0	-7.66	3.30	901.8	-7.66	3.01	886.6	-7.66	2.72	871.4	-7.66	2.43	856.2	-7.66	2.14	841.0	-7.66	1.85	825.8
JUN 1 JUL 12	-7.53	4.50	945.0	-7.53	4.13	930.4	-7.53	3.80	915.8	-7.53	3.51	901.3	-7.53	3.22	886.7	-7.53	2.93	872.2	-7.53	2.64	857.7	-7.53	2.35	843.2	-7.53	2.06	828.7	-7.53	1.77	814.2
MAY 18 JUL 27	-7.32	4.35	913.1	-7.32	3.99	900.0	-7.32	3.67	886.7	-7.32	3.39	873.2	-7.32	3.10	859.7	-7.32	2.81	846.2	-7.32	2.52	832.7	-7.32	2.23	819.2	-7.32	1.94	805.7	-7.32	1.65	792.2
MAY 3 AUG 10	-7.04	4.14	866.2	-7.04	3.79	855.0	-7.04	3.49	843.6	-7.04	3.20	832.2	-7.04	2.91	820.7	-7.04	2.62	809.2	-7.04	2.33	797.8	-7.04	2.04	786.4	-7.04	1.75	775.0	-7.04	1.46	763.6
APR 19 AUG 25	-6.72	3.89	805.0	-6.72	3.56	796.2	-6.72	3.27	787.0	-6.72	2.98	777.7	-6.72	2.69	768.4	-6.72	2.40	759.1	-6.72	2.11	749.8	-6.72	1.82	740.5	-6.72	1.53	731.2	-6.72	1.24	721.9
APR 4 SEP 9	-6.36	3.62	732.5	-6.36	3.31	726.2	-6.36	3.04	719.4	-6.36	2.75	712.3	-6.36	2.46	705.0	-6.36	2.17	697.7	-6.36	1.88	690.4	-6.36	1.59	683.1	-6.36	1.30	675.8	-6.36	1.01	668.5
MAR 21 SEP 23	-6.00	3.34	651.2	-6.00	3.05	647.3	-6.00	2.80	642.8	-6.00	2.55	638.3	-6.00	2.30	633.8	-6.00	2.05	629.3	-6.00	1.80	624.8	-6.00	1.55	620.3	-6.00	1.30	615.8	-6.00	1.05	611.3
MAR 7 OCT 8	-5.64	3.06	566.9	-5.64	2.79	565.2	-5.64	2.55	562.8	-5.64	2.30	559.9	-5.64	2.05	557.0	-5.64	1.80	554.1	-5.64	1.55	551.2	-5.64	1.30	548.3	-5.64	1.05	545.4	-5.64	0.80	542.5
FEB 20 OCT 22	-5.28	2.80	485.8	-5.28	2.54	485.2	-5.28	2.32	485.2	-5.28	2.07	485.2	-5.28	1.82	485.2	-5.28	1.57	485.2	-5.28	1.32	485.2	-5.28	1.07	485.2	-5.28	0.82	485.2	-5.28	0.57	485.2
FEB 7 NOV 5	-4.96	2.55	413.0	-4.96	2.31	414.4	-4.96	2.11	415.1	-4.96	1.91	415.1	-4.96	1.71	415.1	-4.96	1.51	415.1	-4.96	1.31	415.1	-4.96	1.11	415.1	-4.96	0.91	415.1	-4.96	0.71	415.1
JAN 23 NOV 19	-4.68	2.34	354.6	-4.68	2.11	356.9	-4.68	1.92	358.4	-4.68	1.73	358.4	-4.68	1.53	358.4	-4.68	1.33	358.4	-4.68	1.13	358.4	-4.68	0.93	358.4	-4.68	0.73	358.4	-4.68	0.53	358.4
JAN 10 DEC 3	-4.47	2.18	313.8	-4.47	1.97	316.5	-4.47	1.79	318.5	-4.47	1.60	318.5	-4.47	1.40	318.5	-4.47	1.20	318.5	-4.47	1.00	318.5	-4.47	0.80	318.5	-4.47	0.60	318.5	-4.47	0.40	318.5
DEC 22	-4.34	2.09	290.1	-4.34	1.88	293.1	-4.34	1.71	295.4	-4.34	1.51	295.4	-4.34	1.31	295.4	-4.34	1.11	295.4	-4.34	0.91	295.4	-4.34	0.71	295.4	-4.34	0.51	295.4	-4.34	0.31	295.4

NOTE - FOR ASPECTS WITH WEST COMPONENTS, THE TIME AND SIGN OF SR AND SS ARE REVERSED.

RADIATION INDEXES FOR VARIOUS FACETS AT LATITUDE 46 N



HORIZONTAL SURFACE

LATITUDE 46 N

	SR	SS	LY
JUN 22	-7.78	7.78	1023.6
JUN 1 JUL 12	-7.65	7.65	999.5
MAY 18 JUL 27	-7.42	7.42	957.8
MAY 3 AUG 10	-7.12	7.12	897.8
APR 19 AUG 25	-6.77	6.77	821.4
APR 4 SEP 9	-6.39	6.39	733.3
MAR 21 SEP 23	-6.00	6.00	637.1
MAR 7 OCT 8	-5.61	5.61	539.9
FEB 20 OCT 22	-5.23	5.23	448.8
FEB 7 NOV 5	-4.88	4.88	369.1
JAN 23 NOV 19	-4.58	4.58	306.4
JAN 10 DEC 3	-4.35	4.35	263.5
DEC 22	-4.22	4.22	239.0

YEAR R.I.
233.753 .4447

LATITUDE 46 N
ASPECT N -

	SLOPE											
	10 PCT				20 PCT				30 PCT			
	THETA	ALPHA	SR	SS	LY	SR	SS	LY	THETA	ALPHA	SR	SS
JUN 22	-7.78	7.78	1016.3	-7.78	7.78	999.4	-7.78	7.78	976.1	-7.78	7.78	942.3
JUN 1 JUL 12	-7.65	7.65	986.9	-7.65	7.65	965.0	-7.65	7.65	935.4	-7.65	7.65	899.6
MAY 18 JUL 27	-7.42	7.42	936.5	-7.42	7.42	906.7	-7.42	7.42	869.8	-7.42	7.42	827.8
MAY 3 AUG 10	-7.12	7.12	865.1	-7.12	7.12	824.8	-7.12	7.12	778.6	-7.12	7.12	728.4
APR 19 AUG 25	-6.77	6.77	776.1	-6.77	6.77	724.1	-6.77	6.77	667.7	-6.77	6.77	608.8
APR 4 SEP 9	-6.39	6.39	675.5	-6.39	6.39	612.3	-6.39	6.39	546.0	-6.39	6.39	478.8
MAR 21 SEP 23	-6.00	6.00	568.2	-6.00	6.00	495.2	-6.00	6.00	420.6	-6.00	6.00	346.5
MAR 7 OCT 8	-5.52	5.52	462.6	-5.41	5.41	382.7	-5.27	5.27	303.1	-5.07	5.07	225.9
FEB 20 OCT 22	-5.06	5.06	366.2	-4.83	4.83	283.2	-4.54	4.54	202.9	-4.12	4.12	128.4
FEB 7 NOV 5	-4.62	4.62	284.2	-4.28	4.28	201.5	-3.82	3.82	124.7	-3.13	3.13	58.2
JAN 23 NOV 19	-4.24	4.24	221.6	-3.79	3.79	141.5	-3.15	3.15	70.9	-2.05	2.05	16.8
JAN 10 DEC 3	-3.95	3.95	179.8	-3.40	3.40	103.0	-2.57	2.57	39.2	-1.58	1.58	4.4
DEC 22	-3.77	3.77	156.4	-3.16	3.16	82.3	-2.17	2.17	23.7	0.00	0.00	0.0
	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.
	213.087	64054	191.457	3643	169.984	3234	150.335	2860	133.926	2548		
	SLOPE											
	60 PCT				70 PCT				80 PCT			
	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA
JUN 22	-7.78	7.78	866.5	-7.78	7.78	826.0	-7.78	7.78	785.6	-7.78	7.78	746.3
JUN 1 JUL 12	-7.65	7.65	817.7	-7.65	7.65	774.9	-7.65	7.65	732.6	-7.65	7.65	691.8
MAY 18 JUL 27	-7.42	7.42	736.0	-7.42	7.42	689.6	-7.42	7.42	648.4	-7.42	7.42	601.2
MAY 3 AUG 10	-7.12	7.12	624.1	-7.12	7.12	573.0	-7.12	7.12	528.1	-7.12	7.12	478.0
APR 19 AUG 25	-6.77	6.77	491.1	-6.77	6.77	435.1	-6.77	6.77	382.4	-6.77	6.77	333.4
APR 4 SEP 9	-6.39	6.39	348.8	-6.39	6.39	288.5	-6.39	6.39	232.6	-6.39	6.39	181.1
MAR 21 SEP 23	-6.00	6.00	206.8	-6.00	6.00	143.5	-6.00	6.00	85.3	-6.00	6.00	32.3
MAR 7 OCT 8	-4.32	4.32	87.7	-3.43	3.43	32.1	0.00	0.00	0.0	0.00	0.00	0.0
FEB 20 OCT 22	-2.24	2.24	13.4	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0
FEB 7 NOV 5	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0
JAN 23 NOV 19	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0
JAN 10 DEC 3	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0
DEC 22	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0
	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.
	119.727	2278	107.393	2043	96.596	1838	87.320	1661	79.084	1505		

NOTE - FOR ASPECTS WITH WEST COMPONENTS, THE TIME AND SIGN OF SR AND SS ARE REVERSED.

LATITUDE 46 N
ASPECT S -

	SLOPE																									
	10 PCT					20 PCT					30 PCT					40 PCT					50 PCT					
	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	
JUN 22	-7.44	7.44	1022.9			-7.17	7.17	1016.1			-6.94	6.94	1003.0			-6.75	6.75	984.4			-6.59	6.59	961.5			
JUN 1 JUL 12	-7.33	7.33	1004.1			-7.08	7.08	1002.1			-6.87	6.87	993.4			-6.70	6.70	978.8			-6.55	6.55	959.4			
MAY 18 JUL 27	-7.15	7.15	971.0			-6.94	6.94	977.0			-6.76	6.76	975.7			-6.60	6.60	967.9			-6.47	6.47	954.6			
MAY 3 AUG 10	-6.91	6.91	922.5			-6.74	6.74	939.2			-6.60	6.60	948.1			-6.48	6.48	949.5			-6.38	6.38	944.8			
APR 19 AUG 25	-6.63	6.63	859.1			-6.51	6.51	888.4			-6.41	6.41	909.2			-6.33	6.33	921.8			-6.26	6.26	927.4			
APR 4 SEP 9	-6.32	6.32	784.0			-6.26	6.26	826.3			-6.21	6.21	859.6			-6.17	6.17	884.4			-6.13	6.13	901.2			
MAR 21 SEP 23	-6.00	6.00	699.6			-6.00	6.00	754.1			-6.00	6.00	799.8			-6.00	6.00	836.5			-6.00	6.00	864.9			
MAR 7 OCT 8	-5.61	5.61	612.1			-5.61	5.61	676.8			-5.61	5.61	733.0			-5.61	5.61	780.2			-5.61	5.61	818.8			
FEB 20 OCT 22	-5.23	5.23	527.5			-5.23	5.23	599.5			-5.23	5.23	663.4			-5.23	5.23	718.5			-5.23	5.23	768.8			
FEB 7 NOV 5	-4.88	4.88	451.4			-4.88	4.88	527.8			-4.88	4.88	596.4			-4.88	4.88	656.6			-4.88	4.88	708.2			
JAN 23 NOV 19	-4.58	4.58	390.1			-4.58	4.58	468.4			-4.58	4.58	539.4			-4.58	4.58	602.3			-4.58	4.58	656.8			
JAN 10 DEC 3	-4.35	4.35	347.2			-4.35	4.35	425.8			-4.35	4.35	497.6			-4.35	4.35	561.5			-4.35	4.35	617.3			
DEC 22	-4.22	4.22	322.2			-4.22	4.22	400.7			-4.22	4.22	472.5			-4.22	4.22	536.7			-4.22	4.22	592.9			
	YEAR	R.I.	YEAR	R.I.	YEAR	YEAR	R.I.	YEAR	R.I.	YEAR	YEAR	R.I.	YEAR	R.I.	YEAR	YEAR	R.I.	YEAR	R.I.	YEAR	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.
	252.557	.4805	266.873	.5116	282.381	.5373	293.061	.5576	301.084	.5728																
	SLOPE																									
	60 PCT					70 PCT					80 PCT					90 PCT					100 PCT					
	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	
JUN 22	-6.45	6.45	935.6			-6.32	6.32	907.8			-6.21	6.21	879.4			-6.12	6.12	851.2			-6.03	6.03	823.5			
JUN 1 JUL 12	-6.41	6.41	936.7			-6.30	6.30	911.7			-6.20	6.20	885.7			-6.11	6.11	859.6			-6.03	6.03	833.7			
MAY 18 JUL 27	-6.36	6.36	937.2			-6.26	6.26	917.1			-6.17	6.17	895.3			-6.09	6.09	872.8			-6.02	6.02	850.1			
MAY 3 AUG 10	-6.29	6.29	935.1			-6.21	6.21	921.7			-6.14	6.14	905.9			-6.07	6.07	888.7			-6.02	6.02	870.6			
APR 19 AUG 25	-6.20	6.20	927.1			-6.14	6.14	922.2			-6.09	6.09	913.9			-6.05	6.05	903.3			-6.01	6.01	891.1			
APR 4 SEP 9	-6.10	6.10	911.3			-6.07	6.07	915.9			-6.05	6.05	916.2			-6.03	6.03	913.2			-6.01	6.01	907.9			
MAR 21 SEP 23	-6.00	6.00	885.7			-6.00	6.00	900.3			-6.00	6.00	909.6			-6.00	6.00	914.8			-6.00	6.00	917.0			
MAR 7 OCT 8	-5.61	5.61	849.4			-5.61	5.61	873.0			-5.61	5.61	890.8			-5.61	5.61	903.7			-5.61	5.61	912.8			
FEB 20 OCT 22	-5.23	5.23	803.0			-5.23	5.23	833.7			-5.23	5.23	858.1			-5.23	5.23	877.2			-5.23	5.23	892.0			
FEB 7 NOV 5	-4.88	4.88	751.5			-4.88	4.88	787.2			-4.88	4.88	816.4			-4.88	4.88	839.9			-4.88	4.88	858.8			
JAN 23 NOV 19	-4.58	4.58	703.1			-4.58	4.58	741.8			-4.58	4.58	773.9			-4.58	4.58	800.2			-4.58	4.58	821.8			
JAN 10 DEC 3	-4.35	4.35	665.0			-4.35	4.35	705.3			-4.35	4.35	738.9			-4.35	4.35	766.7			-4.35	4.35	789.7			
DEC 22	-4.22	4.22	641.1			-4.22	4.22	682.0			-4.22	4.22	716.2			-4.22	4.22	744.7			-4.22	4.22	768.4			
	YEAR	R.I.	YEAR	R.I.	YEAR	YEAR	R.I.	YEAR	R.I.	YEAR	YEAR	R.I.	YEAR	R.I.	YEAR	YEAR	R.I.	YEAR	R.I.	YEAR	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.
	306.747	.5836	310.433	.5906	312.515	.5946	313.348	.5962	313.235	.5960																

NOTE - FOR ASPECTS WITH WEST COMPONENTS, THE TIME AND SIGN OF SR AND SS ARE REVERSED.

LATITUDE 46 N
ASPECT NNE - NNW

		SLOPE																			
		10 PCT		20 PCT		30 PCT		40 PCT		50 PCT											
		THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA
		51.2	3.5	56.2	7.8	60.9	13.1	65.0	19.6	68.5	27.8										
		SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS
JUN 22		-7.78	7.78	1016.5	-7.78	7.78	999.7	-7.78	7.78	974.6	-7.78	7.78	942.9	-7.78	7.78	906.5	-7.78	7.78	874.1	-7.78	7.78
JUN 1 JUL 12		-7.65	7.65	987.5	-7.65	7.65	966.2	-7.65	7.65	937.0	-7.65	7.65	901.8	-7.65	7.65	866.4	-7.65	7.65	831.0	-7.65	7.65
MAY 18 JUL 27		-7.42	7.42	937.8	-7.42	7.42	909.2	-7.42	7.42	873.4	-7.42	7.42	838.2	-7.42	7.42	802.8	-7.42	7.42	767.4	-7.42	7.42
MAY 3 AUG 10		-7.12	7.12	867.3	-7.12	7.12	829.0	-7.12	7.12	788.8	-7.12	7.12	748.4	-7.12	7.12	708.0	-7.12	7.12	667.6	-7.12	7.12
APR 19 AUG 25		-6.77	6.69	779.2	-6.77	6.69	730.5	-6.77	6.69	677.3	-6.77	6.69	621.6	-6.77	6.69	569.1	-6.77	6.69	516.8	-6.77	6.69
APR 4 SEP 9		-6.39	6.24	679.8	-6.39	6.24	621.4	-6.39	6.24	560.4	-6.39	6.24	500.0	-6.39	6.24	439.7	-6.39	6.24	379.4	-6.39	6.24
MAR 21 SEP 23		-6.00	5.77	573.7	-6.00	5.48	507.4	-6.00	5.13	440.8	-6.00	4.69	376.4	-6.00	4.14	316.7	-6.00	3.60	257.0	-6.00	3.15
MAR 7 OCT 8		-5.61	5.30	469.1	-5.61	4.92	397.5	-5.61	4.45	328.0	-5.61	3.88	263.5	-5.61	3.18	206.4	-5.61	2.63	147.9	-5.61	2.18
FEB 20 OCT 22		-5.23	4.84	373.2	-5.23	4.36	299.1	-5.23	3.78	229.7	-5.23	3.06	167.9	-5.23	2.19	116.3	-5.23	1.64	74.8	-5.23	1.19
FEB 7 NOV 5		-4.88	4.41	291.4	-4.88	3.84	217.4	-4.88	3.13	150.5	-4.88	2.24	93.8	-4.88	1.14	50.0	-4.88	0.60	9.5	-4.88	0.15
JAN 23 NOV 19		-4.51	4.04	228.7	-4.51	3.37	156.6	-4.51	2.53	94.0	-4.51	1.44	44.3	-4.51	0.40	11.2	-4.51	0.00	0.0	-4.51	0.00
JAN 10 DEC 3		-4.22	3.76	186.8	-4.22	3.01	117.3	-4.22	2.04	59.4	-4.22	1.07	17.5	-4.22	0.00	0.0	-4.22	0.00	0.0	-4.22	0.00
DEC 22		-4.05	3.58	163.2	-4.05	2.78	95.9	-4.05	1.71	41.7	-4.05	0.74	6.2	-4.05	0.00	0.0	-4.05	0.00	0.0	-4.05	0.00
		YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.
		214.724	4.085	194.952	3.709	175.428	3.338	157.160	2.990	141.375	2.690										
		60 PCT		70 PCT		80 PCT		90 PCT		100 PCT											
		THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA										
		71.3	37.8	73.2	49.4	74.3	62.0	74.6	74.3	74.3	85.5										
		SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS
JUN 22		-7.78	7.78	867.3	-7.78	7.78	826.9	-7.78	7.78	786.6	-7.78	7.78	747.4	-7.78	7.78	709.5	-7.78	7.78	670.1	-7.78	7.78
JUN 1 JUL 12		-7.65	7.65	820.7	-7.65	7.65	778.2	-7.65	7.65	736.3	-7.65	7.65	695.7	-7.65	7.65	656.8	-7.65	7.65	617.9	-7.65	7.65
MAY 18 JUL 27		-7.42	7.42	742.5	-7.42	7.42	696.8	-7.42	7.42	652.2	-7.42	7.42	609.6	-7.42	7.42	569.1	-7.42	7.42	529.6	-7.42	7.42
MAY 3 AUG 10		-7.12	7.12	635.2	-7.12	7.12	585.4	-7.12	7.12	537.6	-7.12	7.12	492.4	-7.12	7.12	450.1	-7.12	7.12	409.6	-7.12	7.12
APR 19 AUG 25		-6.77	5.79	510.9	-6.77	5.35	459.2	-6.77	4.75	412.0	-6.77	4.00	370.5	-6.77	3.18	335.2	-6.77	3.18	294.7	-6.77	3.18
APR 4 SEP 9		-6.39	4.61	384.3	-6.39	3.98	334.4	-6.39	3.24	291.5	-6.39	2.44	256.2	-6.39	1.66	227.9	-6.39	1.66	187.4	-6.39	1.66
MAR 21 SEP 23		-6.00	3.48	263.6	-6.00	2.70	218.6	-6.00	1.87	182.5	-6.00	1.04	154.8	-6.00	0.30	134.2	-6.00	0.30	94.7	-6.00	0.30
MAR 7 OCT 8		-5.61	2.35	158.6	-5.61	1.43	121.2	-5.61	0.50	93.8	-5.61	-0.35	74.9	-5.61	-1.07	62.0	-5.61	-1.07	23.4	-5.61	-1.07
FEB 20 OCT 22		-5.23	1.17	76.5	-5.23	0.06	48.9	-5.23	-1.02	31.6	-5.23	-1.91	21.8	-5.23	-2.58	16.4	-5.23	-2.58	0.0	-5.23	-2.58
FEB 7 NOV 5		-4.83	0.21	20.6	-4.83	-1.80	5.2	-4.83	-3.63	2.2	-4.83	-4.50	0.0	-4.83	-5.17	0.0	-4.83	-5.17	0.0	-4.83	-5.17
JAN 23 NOV 19		0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00
JAN 10 DEC 3		0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00
DEC 22		0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00
		YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.
		127.979	2.435	116.361	2.214	106.315	2.023	97.686	1.859	90.173	1.716										

NOTE - FOR ASPECTS WITH WEST COMPONENTS, THE TIME AND SIGN OF SR AND SS ARE REVERSED.

	SLOPE						SLOPE						SLOPE						SLOPE					
	10 PCT		20 PCT		30 PCT		40 PCT		50 PCT		60 PCT		70 PCT		80 PCT		90 PCT		100 PCT					
	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA	THETA	ALPHA				
	40.7	2.9	35.4	5.3	30.3	7.3	25.4	9.1	20.9	10.6														
	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS				
JUN 22	-7.66	7.27	1023.2	-7.55	6.85	1017.4	-7.47	6.49	1006.0	-7.40	6.19	989.5	-7.34	5.93	969.0	-7.29	5.89	965.9	-7.25	5.81	959.2			
JUN 1 JUL 12	-7.54	7.16	1004.0	-7.46	6.76	1002.7	-7.40	6.42	995.5	-7.34	6.13	982.9	-7.29	5.89	965.9	-7.25	5.81	959.2	-7.21	5.70	946.8			
MAY 18 JUL 27	-7.36	6.98	970.3	-7.32	6.61	976.7	-7.28	6.30	976.5	-7.21	6.04	970.4	-7.11	5.90	949.8	-7.07	5.78	925.7	-7.03	5.68	919.7			
MAY 3 AUG 10	-7.12	6.73	921.0	-7.11	6.41	937.5	-7.11	6.14	947.0	-7.07	5.94	905.6	-6.97	5.75	876.8	-6.93	5.64	863.7	-6.89	5.54	849.7			
APR 19 AUG 25	-6.77	6.44	856.7	-6.77	6.17	886.9	-6.77	5.94	905.6	-6.73	5.73	852.6	-6.67	5.58	823.0	-6.63	5.48	809.5	-6.59	5.38	795.5			
APR 4 SEP 9	-6.39	6.13	780.5	-6.39	5.92	820.6	-6.39	5.73	852.6	-6.35	5.58	823.0	-6.31	5.48	809.5	-6.27	5.38	795.5	-6.23	5.28	781.5			
MAR 21 SEP 23	-6.00	5.81	695.1	-6.00	5.65	745.9	-6.00	5.51	788.6	-6.00	5.40	823.0	-6.00	5.30	849.6	-6.00	5.20	866.2	-6.00	5.10	882.8			
MAR 7 OCT 8	-5.61	5.48	606.5	-5.61	5.38	666.3	-5.61	5.29	717.9	-5.61	5.22	761.2	-5.61	5.15	796.3	-5.61	5.08	826.4	-5.61	5.02	856.5			
FEB 20 OCT 22	-5.23	5.17	521.4	-5.23	5.12	587.5	-5.23	5.08	645.9	-5.23	5.05	696.0	-5.23	5.02	737.9	-5.23	5.00	779.0	-5.23	4.98	820.1			
FEB 7 NOV 5	-4.88	4.88	445.0	-4.88	4.88	515.2	-4.88	4.88	577.9	-4.88	4.88	632.7	-4.88	4.88	679.4	-4.88	4.88	726.1	-4.88	4.88	772.8			
JAN 23 NOV 19	-4.58	4.58	383.6	-4.58	4.58	458.6	-4.58	4.58	520.7	-4.58	4.58	578.1	-4.58	4.58	624.8	-4.58	4.58	671.5	-4.58	4.58	718.2			
JAN 10 DEC 3	-4.35	4.35	340.7	-4.35	4.35	413.1	-4.35	4.35	478.9	-4.35	4.35	537.4	-4.35	4.35	586.3	-4.35	4.35	635.0	-4.35	4.35	683.7			
DEC 22	-4.22	4.22	315.8	-4.22	4.22	388.0	-4.22	4.22	454.0	-4.22	4.22	512.7	-4.22	4.22	561.0	-4.22	4.22	607.7	-4.22	4.22	654.4			
	YEAR	R.e.	YEAR	R.e.	YEAR	R.e.	YEAR	R.e.	YEAR	R.e.	YEAR	R.e.	YEAR	R.e.	YEAR	R.e.	YEAR	R.e.	YEAR	R.e.				
	251.173	4.779	266.355	5.068	278.962	5.307	288.946	5.497	296.450	5.640														

NOTE - FOR ASPECTS WITH WEST COMPONENTS, THE TIME AND SIGN OF SR AND SS ARE REVERSED.

LATITUDE 46 N
ASPECT NE - NW

	SLOPE																										
	10 PCT					20 PCT					30 PCT					40 PCT					50 PCT						
	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY		
JUN 22	-7.78	7.65	1017.1	-7.78	7.48	1001.2	-7.78	7.26	977.5	-7.78	6.98	947.8	-7.78	6.61	914.3	-7.78	6.23	881.8	-7.78	5.86	849.3	-7.78	5.48	816.8	-7.78	5.11	784.3
JUN 1 JUL 12	-7.65	7.49	989.3	-7.65	7.29	970.3	-7.65	7.04	944.0	-7.65	6.72	912.4	-7.65	6.35	880.0	-7.65	5.98	847.5	-7.65	5.61	815.0	-7.65	5.23	782.5	-7.65	4.86	750.0
MAY 18 JUL 27	-7.42	7.22	941.7	-7.42	6.98	917.7	-7.42	6.67	887.4	-7.42	6.31	853.0	-7.42	5.94	818.6	-7.42	5.57	784.2	-7.42	5.20	749.8	-7.42	4.83	715.4	-7.42	4.46	681.0
MAY 3 AUG 10	-7.12	6.87	873.9	-7.12	6.57	843.5	-7.12	6.21	808.3	-7.12	5.79	770.7	-7.12	5.37	732.2	-7.12	4.95	694.7	-7.12	4.53	657.2	-7.12	4.11	619.7	-7.12	3.69	582.2
APR 19 AUG 25	-6.77	6.46	789.0	-6.77	6.10	751.7	-6.77	5.69	711.7	-6.77	5.22	671.1	-6.77	4.79	631.6	-6.77	4.37	592.1	-6.77	3.95	552.6	-6.77	3.53	513.1	-6.77	3.11	473.6
APR 4 SEP 9	-6.39	6.03	692.6	-6.39	5.61	649.0	-6.39	5.14	604.9	-6.39	4.62	562.3	-6.39	4.20	522.8	-6.39	3.78	483.3	-6.39	3.36	443.8	-6.39	2.94	404.3	-6.39	2.52	364.8
MAR 21 SEP 23	-6.00	5.58	589.2	-6.00	5.11	540.6	-6.00	4.58	493.7	-6.00	4.00	450.5	-6.00	3.52	411.3	-6.00	3.04	372.1	-6.00	2.56	332.9	-6.00	2.08	293.7	-6.00	1.60	254.5
MAR 7 OCT 8	-5.61	5.13	486.6	-5.61	4.60	434.8	-5.61	4.01	386.9	-5.61	3.39	344.5	-5.61	2.79	302.1	-5.61	2.19	259.7	-5.61	1.59	217.3	-5.61	1.00	174.9	-5.61	0.40	132.5
FEB 20 OCT 22	-5.23	4.70	392.1	-5.23	4.11	339.0	-5.23	3.46	291.7	-5.23	2.79	251.5	-5.23	2.13	209.1	-5.23	1.47	166.7	-5.23	0.81	124.3	-5.23	0.15	81.9	-5.23	-0.45	39.5
FEB 7 NOV 5	-4.88	4.29	311.0	-4.88	3.64	258.2	-4.88	2.94	212.9	-4.88	2.22	176.0	-4.88	1.52	139.1	-4.88	0.82	97.2	-4.88	0.12	55.3	-4.88	-0.58	13.4	-4.88	-1.28	-29.1
JAN 23 NOV 19	-4.58	3.94	248.3	-4.58	3.23	197.0	-4.58	2.48	154.4	-4.58	1.70	121.1	-4.58	0.96	79.2	-4.58	0.22	37.3	-4.58	-0.48	-4.7	-4.58	-1.18	-50.8	-4.58	-1.88	-101.2
JAN 10 DEC 3	-4.25	3.68	205.1	-4.25	2.92	156.5	-4.25	2.11	116.5	-4.25	1.29	86.3	-4.25	0.51	46.4	-4.25	-0.25	4.5	-4.25	-0.95	-40.5	-4.25	-1.65	-80.9	-4.25	-2.35	-121.3
DEC 22	-4.22	3.51	182.3	-4.22	2.73	134.0	-4.22	1.89	95.8	-4.22	1.03	67.7	-4.22	0.22	28.2	-4.22	-0.48	-39.5	-4.22	-1.18	-89.6	-4.22	-1.88	-139.7	-4.22	-2.58	-189.8
JUN 22	-7.78	6.17	879.2	-7.78	5.65	844.5	-7.78	5.11	811.8	-7.78	4.56	781.8	-7.78	4.05	754.8	-7.78	3.54	727.8	-7.78	3.03	696.8	-7.78	2.52	669.8	-7.78	2.01	642.8
JUN 1 JUL 12	-7.65	5.85	842.2	-7.65	5.33	807.6	-7.65	4.80	775.3	-7.65	4.27	746.0	-7.65	3.76	719.8	-7.65	3.25	694.3	-7.65	2.74	668.8	-7.65	2.23	643.3	-7.65	1.72	617.8
MAY 18 JUL 27	-7.42	5.58	780.6	-7.42	4.85	746.2	-7.42	4.33	714.8	-7.42	3.82	686.7	-7.42	3.31	661.8	-7.42	2.80	636.3	-7.42	2.29	610.8	-7.42	1.78	585.3	-7.42	1.27	559.8
MAY 3 AUG 10	-7.12	4.80	696.3	-7.12	4.27	662.6	-7.12	3.75	632.6	-7.12	3.24	608.2	-7.12	2.73	583.7	-7.12	2.22	559.2	-7.12	1.71	534.7	-7.12	1.20	510.2	-7.12	0.69	485.7
APR 19 AUG 25	-6.77	4.16	595.9	-6.77	3.62	563.6	-6.77	3.11	535.5	-6.77	2.60	511.5	-6.77	2.09	487.6	-6.77	1.58	463.7	-6.77	1.07	439.8	-6.77	0.56	415.3	-6.77	0.05	390.8
APR 4 SEP 9	-6.39	3.50	488.1	-6.39	2.96	457.9	-6.39	2.46	432.5	-6.39	1.95	411.3	-6.39	1.44	387.4	-6.39	0.93	363.5	-6.39	0.42	339.6	-6.39	-0.09	315.7	-6.39	-0.58	291.8
MAR 21 SEP 23	-6.00	2.84	379.6	-6.00	2.29	352.4	-6.00	1.80	330.2	-6.00	1.36	312.2	-6.00	0.91	294.2	-6.00	0.46	276.2	-6.00	0.01	258.2	-6.00	-0.44	239.2	-6.00	-0.93	210.2
MAR 7 OCT 8	-5.61	2.17	279.1	-5.61	1.62	255.6	-5.61	1.13	237.0	-5.61	0.71	222.4	-5.61	0.26	204.4	-5.61	-0.29	186.4	-5.61	-0.74	168.4	-5.61	-1.19	150.4	-5.61	-1.64	132.4
FEB 20 OCT 22	-5.23	1.51	193.4	-5.23	0.96	173.9	-5.23	0.48	159.1	-5.23	0.08	147.8	-5.23	-0.47	129.8	-5.23	-0.92	111.8	-5.23	-1.37	93.8	-5.23	-1.82	75.8	-5.23	-2.27	57.8
FEB 7 NOV 5	-4.88	0.88	126.1	-4.88	0.32	110.6	-4.88	-0.15	92.4	-4.88	-0.54	91.1	-4.88	-0.99	73.1	-4.88	-1.44	54.1	-4.88	-1.89	35.1	-4.88	-2.34	16.1	-4.88	-2.79	-2.9
JAN 23 NOV 19	-4.58	0.29	79.2	-4.58	-0.27	67.2	-4.58	-0.73	59.0	-4.58	-1.10	53.3	-4.58	-1.55	34.8	-4.58	-2.00	15.8	-4.58	-2.45	-3.2	-4.58	-2.90	-49.1	-4.58	-3.35	-80.1
JAN 10 DEC 3	-4.25	-0.18	50.8	-4.25	-0.75	41.5	-4.25	-1.20	35.5	-4.25	-1.65	31.5	-4.25	-2.10	17.0	-4.25	-2.55	-2.5	-4.25	-3.00	-50.0	-4.25	-3.45	-90.5	-4.25	-3.90	-131.0
DEC 22	-4.22	-0.49	36.3	-4.22	-1.07	28.7	-4.22	-1.51	24.0	-4.22	-1.96	21.0	-4.22	-2.41	6.0	-4.22	-2.86	-14.0	-4.22	-3.31	-54.0	-4.22	-3.76	-94.0	-4.22	-4.21	-134.0
JUN 22	-7.78	6.17	879.2	-7.78	5.65	844.5	-7.78	5.11	811.8	-7.78	4.56	781.8	-7.78	4.05	754.8	-7.78	3.54	727.8	-7.78	3.03	696.8	-7.78	2.52	669.8	-7.78	2.01	642.8
JUN 1 JUL 12	-7.65	5.85	842.2	-7.65	5.33	807.6	-7.65	4.80	775.3	-7.65	4.27	746.0	-7.65	3.76	719.8	-7.65	3.25	694.3	-7.65	2.74	668.8	-7.65	2.23	643.3	-7.65	1.72	617.8
MAY 18 JUL 27	-7.42	5.58	780.6	-7.42	4.85	746.2	-7.42	4.33	714.8	-7.42	3.82	686.7	-7.42	3.31	661.8	-7.42	2.80	636.3	-7.42	2.29	610.8	-7.42	1.78	585.3	-7.42	1.27	559.8
MAY 3 AUG 10	-7.12	4.80	696.3	-7.12	4.27	662.6	-7.12	3.75	632.6	-7.12	3.24	608.2	-7.12	2.73	583.7	-7.12	2.22	559.2	-7.12	1.71	534.7	-7.12	1.20	510.2	-7.12	0.69	485.7
APR 19 AUG 25	-6.77	4.16	595.9	-6.77	3.62	563.6	-6.77	3.11	535.5	-6.77	2.60	511.5	-6.77	2.09	487.6	-6.77	1.58	463.7	-6.77	1.07	439.8	-6.77	0.56	415.3	-6.77	0.05	390.8
APR 4 SEP 9	-6.39	3.50	488.1	-6.39	2.96	457.9	-6.39	2.46	432.5	-6.39	1.95	411.3	-6.39	1.44	387.4	-6.39	0.93	363.5	-6.39	0.42	339.6	-6.39	-0.09	315.7	-6.39	-0.58	291.8
MAR 21 SEP 23	-6.00	2.84	379.6	-6.00	2.29	352.4	-6.00	1.80	330.2	-6.00	1.36	312.2	-6.00	0.91	294.2	-6.00	0.46	276.2	-6.00	0.01	258.2	-6.00	-0.44	239.2	-6.00	-0.93	210.2
MAR 7 OCT 8	-5.61	2.17	279.1	-5.61	1.62	255.6	-5.61	1.13	237.0	-5.61	0.71	222.4	-5.61	0.26	204.4	-5.61	-0.29	186.4	-5.61	-0.74	168.4	-5.61	-1.19	150.4	-5.61	-1.64	132.4
FEB 20 OCT 22	-5.23	1.51	193.4	-5.23	0.96	173.9	-5.23	0.48	159.1	-5.23	0.08	147.8	-5.23	-0.47	129.8	-5.23	-0.92	111.8	-5.23	-1.37	93.8	-5.23	-1.82	75.8	-5.23	-2.27	57.8
FEB 7 NOV 5	-4.88	0.88	126.1	-4.88	0.32	110.6	-4.88	-0.15	92.4	-4.88	-0.54	91.1	-4.88	-0.99	73.1	-4.88	-1.44	54.1	-4.88	-1.89	35.1	-4.88	-2.34	16.1	-4.88	-2.79	-2.9
JAN 23 NOV 19	-4.58	0.29	79.2	-4.58	-0.27	67.2	-4.58	-0.73	59.0	-4.58	-1.10	53.3	-4.58	-1.55	34.8	-4.58	-2.00	15.8	-4.58	-2.45	-3.2	-4.58	-2.90	-49.1	-4.58	-3.35	-80.1
JAN 10 DEC 3	-4.25	-0.18	50.8	-4.25	-0.75	41.5	-4.25	-1.20	35.5	-4.25	-1.65	31.5	-4.25	-2.10	17.0	-4.25	-2.55	-2.5	-4.25	-3.00	-50.0	-4.25	-3.45	-90.5	-4.25	-3.90	-131.0
DEC 22	-4.22	-0.49	36.3	-4.22	-1.07	28.7	-4.22	-1.51	24.0	-4.22	-1.96	21.0	-4.22	-2.41	6.0	-4.22	-2.86	-14.0	-4.22	-3.31	-54.0	-4.22	-3.76	-94.0	-4.22	-4.21	-134.0
JUN 22	-7.78	6.17	879.2	-7.78	5.65	844.5	-7.78	5.11	811.8	-7.78	4.56	781.8	-7.78	4.05	754.8	-7.78	3.54	727.8	-7.78	3.03	696.8	-7.78	2.52	669.8	-7.78	2.01	642.8
JUN 1 JUL 12	-7.65	5.85	842.2	-7.65	5.33	807.6	-7.65	4.80	775.3	-7.65	4.27	746.0	-7.65	3.76	719.8	-7.65	3.25	694.3	-7.65	2.74	668.8	-7.65	2.23	643.3	-7.65	1.72	617.8
MAY 18 JUL 27	-7.42	5.58	780.6	-7.42	4.85	746.2	-7.42	4.33	714.8	-7.42	3.82	686.7	-7.42	3.31	661.8	-7.42	2.80	636.3	-7.42	2.29	610.8	-7.42	1.78	585.3	-7.42	1.27	559.8
MAY 3 AUG 10	-7.12	4.80	696.3	-7.12	4.27	662.6	-7.12	3.75	632.6	-7.12	3.24	608.2	-7.12	2.73	583.7	-7.12	2.22	559.2	-7.12	1.71	534.7	-7.12	1.20	510.2	-7.12	0.69	485.7
APR 19 AUG 25	-6.77	4.16	595.9	-6.77	3.62	563.6	-6.77	3.11	535.5	-6.77	2.60	511.5	-6.77	2.09	487.6	-6.77	1.58	463.7	-6.77	1.07	439.8	-6.77	0.56	415.3	-6.77	0.05	390.8
APR 4 SEP 9	-6.39	3.50	488.1	-6.39	2.96	457.9	-6.39	2.46	432.5	-6.39	1.95	411.3	-6.39	1.44	387.4	-6.39	0.93	363.5	-6.39	0.42	339.6	-6.39	-0.09	315.7	-6.39	-0.58	291.8
MAR 21 SEP 23	-6.00	2.84	379.6	-6.00	2.29	352.4	-6.00	1.80	330.2	-6.00	1.36	312.2	-6.00	0.91	294.2	-6.00	0										

NOTE - FOR ASPECTS WITH WEST COMPONENTS, THE TIME AND SIGN OF SR AND SS ARE REVERSED.

LATITUDE 46 N
ASPECT SE - SW

		10 PCT				20 PCT				SLOPE				30 PCT				40 PCT				50 PCT				
		THETA	ALPHA	LY	SR	THETA	ALPHA	LY	SR	THETA	ALPHA	LY	SR	THETA	ALPHA	LY	SR	THETA	ALPHA	LY	SR	THETA	ALPHA	LY		
		41.8	5.4			37.5	10.1			33.2	14.1			29.0	17.5			25.1	20.4							
		SR	SS	LY	SR	SS	LY	SR	SS	SR	SS	LY	SR	SS	LY	SR	SS	SR	SS	LY	SR	SS	LY	SR		
JUN 22		-7.78	7.16	1023.6	-7.78	6.63	1020.0	-7.78	6.17	1012.5	-7.78	5.77	1001.1	-7.78	5.37	990.0	-7.78	4.97	978.9	-7.78	4.57	967.8	-7.78	4.17	956.7	
JUN 1 JUL 12		-7.65	7.05	1003.3	-7.65	6.53	1003.4	-7.65	6.08	999.3	-7.65	5.70	991.0	-7.65	5.30	980.0	-7.65	4.90	969.0	-7.65	4.50	958.0	-7.65	4.10	947.0	
MAY 18 JUL 27		-7.42	6.86	967.9	-7.42	6.37	973.9	-7.42	5.95	975.5	-7.42	5.56	972.4	-7.42	5.16	969.0	-7.42	4.76	965.6	-7.42	4.36	962.2	-7.42	3.96	958.8	
MAY 3 AUG 10		-7.12	6.60	916.1	-7.12	6.15	930.1	-7.12	5.76	939.1	-7.12	5.36	936.0	-7.12	4.96	933.0	-7.12	4.56	929.6	-7.12	4.16	926.2	-7.12	3.76	922.8	
APR 19 AUG 25		-6.77	6.30	848.9	-6.77	5.90	871.9	-6.77	5.55	889.4	-6.77	5.24	901.3	-6.77	4.84	913.3	-6.77	4.44	920.0	-6.77	4.04	926.7	-6.77	3.64	933.4	
APR 4 SEP 9		-6.39	5.98	770.0	-6.39	5.62	801.8	-6.39	5.31	827.9	-6.39	5.00	850.0	-6.39	4.69	872.2	-6.39	4.38	894.5	-6.39	4.07	916.8	-6.39	3.76	939.1	
MAR 21 SEP 23		-6.00	5.64	681.9	-6.00	5.33	721.8	-6.00	5.06	755.7	-6.00	4.83	783.3	-6.00	4.60	811.1	-6.00	4.37	838.9	-6.00	4.14	866.5	-6.00	3.91	894.1	
MAR 7 OCT 8		-5.61	5.30	591.3	-5.61	5.04	637.7	-5.61	4.82	678.1	-5.61	4.63	711.8	-5.61	4.44	745.5	-5.61	4.25	779.2	-5.61	4.06	812.9	-5.61	3.87	846.6	
FEB 20 OCT 22		-5.23	4.96	504.6	-5.23	4.76	555.6	-5.23	4.58	600.6	-5.23	4.42	639.0	-5.23	4.26	677.4	-5.23	4.10	715.8	-5.23	3.94	754.2	-5.23	3.78	792.6	
FEB 7 NOV 5		-4.88	4.67	427.2	-4.88	4.50	480.9	-4.88	4.36	528.7	-4.88	4.24	570.2	-4.88	4.09	617.7	-4.88	3.94	665.2	-4.88	3.79	712.7	-4.88	3.64	760.2	
JAN 23 NOV 19		-4.58	4.42	365.4	-4.58	4.29	420.2	-4.58	4.18	469.4	-4.58	4.09	512.4	-4.58	4.00	561.4	-4.58	3.91	610.4	-4.58	3.82	659.4	-4.58	3.73	708.4	
JAN 10 DEC 3		-4.35	4.23	322.4	-4.35	4.13	377.4	-4.35	4.04	427.0	-4.35	3.97	470.6	-4.35	3.90	520.6	-4.35	3.83	570.6	-4.35	3.76	620.6	-4.35	3.69	670.6	
DEC 22		-4.22	4.11	297.6	-4.22	4.03	352.3	-4.22	3.96	401.9	-4.22	3.90	445.7	-4.22	3.84	490.7	-4.22	3.78	539.7	-4.22	3.72	589.7	-4.22	3.66	639.7	
		YEAR	R.i.e		YEAR	R.i.e		YEAR	R.i.e	YEAR	R.i.e		YEAR	R.i.e	YEAR	R.i.e		YEAR	R.i.e	YEAR	R.i.e	YEAR	R.i.e		YEAR	R.i.e
		247.186	4703		259.035	4928		268.947	5117	276.813	5267		282.705	5379												
		60 PCT			70 PCT			80 PCT		90 PCT			100 PCT													
		THETA	ALPHA	LY	THETA	ALPHA	LY	THETA	ALPHA	LY	THETA	ALPHA	LY	THETA	ALPHA	LY	THETA	ALPHA	LY	THETA	ALPHA	LY	THETA	ALPHA	LY	
		21.4	23.0		17.9	25.2		14.8	27.2		11.9	28.9		9.3	30.4											
		SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	
JUN 22		-7.78	5.12	969.3	-7.78	4.86	950.5	-7.78	4.63	930.9	-7.78	4.42	911.0	-7.78	4.24	891.2	-7.78	4.06	871.4	-7.78	3.88	851.6	-7.78	3.70	831.8	
JUN 1 JUL 12		-7.65	5.07	964.7	-7.65	4.82	948.2	-7.65	4.59	930.6	-7.65	4.40	912.5	-7.65	4.22	894.3	-7.65	4.04	876.1	-7.65	3.86	857.9	-7.65	3.68	839.7	
MAY 18 JUL 27		-7.42	4.99	955.2	-7.42	4.75	942.5	-7.42	4.54	928.2	-7.42	4.36	913.1	-7.42	4.19	897.5	-7.42	4.01	881.9	-7.42	3.84	866.3	-7.42	3.66	850.7	
MAY 3 AUG 10		-7.12	4.88	937.9	-7.12	4.66	930.4	-7.12	4.47	920.7	-7.12	4.30	909.6	-7.12	4.14	897.6	-7.12	3.98	886.0	-7.12	3.82	874.4	-7.12	3.66	862.8	
APR 19 AUG 25		-6.77	4.76	910.2	-6.77	4.56	908.7	-6.77	4.38	904.4	-6.77	4.23	898.1	-6.77	4.09	890.3	-6.77	3.94	882.7	-6.77	3.79	875.1	-6.77	3.64	867.5	
APR 4 SEP 9		-6.39	4.61	871.3	-6.39	4.44	876.1	-6.39	4.29	877.4	-6.39	4.15	876.1	-6.39	4.03	872.9	-6.39	3.91	869.4	-6.39	3.79	866.9	-6.39	3.67	864.4	
MAR 21 SEP 23		-6.00	4.47	820.2	-6.00	4.32	831.0	-6.00	4.19	837.9	-6.00	4.07	841.5	-6.00	3.97	842.7	-6.00	3.87	843.9	-6.00	3.77	845.1	-6.00	3.67	846.3	
MAR 7 OCT 8		-5.61	4.32	760.5	-5.61	4.20	776.6	-5.61	4.09	788.3	-5.61	3.99	796.3	-5.61	3.91	801.6	-5.61	3.83	806.9	-5.61	3.75	812.2	-5.61	3.67	817.5	
FEB 20 OCT 22		-5.23	4.18	696.6	-5.23	4.08	711.0	-5.23	3.99	732.6	-5.23	3.92	744.3	-5.23	3.85	753.0	-5.23	3.78	761.7	-5.23	3.71	770.4	-5.23	3.64	779.1	
FEB 7 NOV 5		-4.88	4.05	634.0	-4.88	3.97	657.3	-4.88	3.91	675.8	-4.88	3.85	690.3	-4.88	3.80	701.6	-4.88	3.75	712.9	-4.88	3.70	724.2	-4.88	3.65	735.5	
JAN 23 NOV 19		-4.58	3.94	579.8	-4.58	3.88	605.1	-4.58	3.83	625.5	-4.58	3.78	641.8	-4.58	3.73	658.1	-4.58	3.68	674.4	-4.58	3.63	690.7	-4.58	3.58	707.0	
JAN 10 DEC 3		-4.35	3.86	539.8	-4.35	3.82	566.0	-4.35	3.78	587.5	-4.35	3.75	604.9	-4.35	3.72	622.2	-4.35	3.69	640.5	-4.35	3.66	658.9	-4.35	3.63	677.3	
DEC 22		-4.22	3.81	515.6	-4.22	3.78	542.3	-4.22	3.75	564.2	-4.22	3.72	582.2	-4.22	3.70	600.2	-4.22	3.67	618.2	-4.22	3.65	636.2	-4.22	3.62	654.2	

NOTE - FOR ASPECTS WITH WEST COMPONENTS, THE TIME AND SIGN OF SR AND SS ARE REVERSED.

		SLOPE											
		10 PCT			20 PCT			30 PCT			40 PCT		
		THETA	ALPHA		THETA	ALPHA		THETA	ALPHA		THETA	ALPHA	
		47.9	7.9		49.2	16.1		49.9	24.4		50.1	32.3	
		SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY
JUN 22		-7.78	7.39	1018.9	-7.78	6.95	1007.3	-7.78	6.45	990.5	-7.78	5.93	970.5
JUN 1 JUL 12		-7.65	7.24	993.0	-7.65	6.79	980.1	-7.65	6.29	962.6	-7.65	5.77	942.2
MAY 18 JUL 27		-7.42	7.00	948.3	-7.42	6.53	933.4	-7.42	6.02	914.6	-7.42	5.50	893.8
MAY 3 AUG 10		-7.12	6.67	884.4	-7.12	6.18	866.8	-7.12	5.67	846.7	-7.12	5.14	825.5
APR 19 AUG 25		-6.77	6.30	803.7	-6.77	5.79	783.4	-6.77	5.26	761.9	-6.77	4.73	740.5
APR 4 SEP 9		-6.39	5.89	711.5	-6.39	5.36	688.6	-6.39	4.82	666.1	-6.39	4.30	644.9
MAR 21 SEP 23		-6.00	5.47	611.7	-6.00	4.93	586.9	-6.00	4.38	563.9	-6.00	3.85	543.3
MAR 7 OCT 8		-5.61	5.06	511.9	-5.61	4.49	486.0	-5.61	3.93	463.1	-5.61	3.40	443.6
FEB 20 OCT 22		-5.23	4.65	419.1	-5.23	4.06	392.9	-5.23	3.49	370.8	-5.23	2.96	352.7
FEB 7 NOV 5		-4.88	4.27	338.7	-4.88	3.67	312.9	-4.88	3.08	291.9	-4.88	2.55	275.4
JAN 23 NOV 19		-4.58	3.95	276.1	-4.58	3.32	251.1	-4.58	2.73	231.5	-4.58	2.20	216.5
JAN 10 DEC 3		-4.35	3.70	233.5	-4.35	3.06	209.4	-4.35	2.46	190.9	-4.35	1.93	177.2
DEC 22		-4.22	3.55	209.4	-4.22	2.90	185.9	-4.22	2.30	168.2	-4.22	1.76	155.2
		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.	
		226.023	.4300		218.306	.4153		210.937	.4013		204.119	.3884	
		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.	
		197.953	.3766										

		SLOPE											
		60 PCT			70 PCT			80 PCT			90 PCT		
		THETA	ALPHA		THETA	ALPHA		THETA	ALPHA		THETA	ALPHA	
		48.9	46.3		47.9	52.2		46.7	57.3		45.4	61.7	
		SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY
JUN 22		-7.78	4.91	926.9	-7.78	4.44	905.7	-7.78	4.01	885.6	-7.78	3.63	866.9
JUN 1 JUL 12		-7.65	4.75	899.0	-7.65	4.29	878.2	-7.65	3.87	858.7	-7.65	3.50	840.5
MAY 18 JUL 27		-7.42	4.49	851.4	-7.42	4.04	831.4	-7.42	3.64	812.8	-7.42	3.28	795.6
MAY 3 AUG 10		-7.12	4.16	784.2	-7.12	3.72	765.4	-7.12	3.33	746.1	-7.12	2.98	732.3
APR 19 AUG 25		-6.77	3.76	701.1	-6.77	3.34	683.8	-6.77	2.97	668.2	-6.77	2.64	654.0
APR 4 SEP 9		-6.39	3.35	608.0	-6.39	2.94	592.5	-6.39	2.58	578.7	-6.39	2.27	566.5
MAR 21 SEP 23		-6.00	2.91	509.6	-6.00	2.52	496.1	-6.00	2.18	484.3	-6.00	1.88	474.1
MAR 7 OCT 8		-5.61	2.48	413.5	-5.61	2.10	402.0	-5.61	1.78	392.3	-5.61	1.50	384.0
FEB 20 OCT 22		-5.23	2.06	326.3	-5.23	1.70	316.8	-5.23	1.39	309.0	-5.23	1.13	302.4
FEB 7 NOV 5		-4.88	1.67	252.8	-4.88	1.32	245.0	-4.88	1.03	238.8	-4.88	.79	232.7
JAN 23 NOV 19		-4.58	1.33	196.9	-4.58	1.00	190.6	-4.58	.72	185.6	-4.58	.49	181.7
JAN 10 DEC 3		-4.35	1.08	159.9	-4.35	.75	154.5	-4.35	.49	150.4	-4.35	.27	147.2
DEC 22		-4.22	.92	139.3	-4.22	.60	134.5	-4.22	.35	130.9	-4.22	.14	128.1
		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.	
		192.447	.3661		187.549	.3568		183.198	.3486		179.323	.3412	
		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.	
		175.828	.3345										

NOTE - FOR ASPECTS WITH WEST COMPONENTS, THE TIME AND SIGN OF SR AND SS ARE REVERSED.

LATITUDE 46 N
ASPECT ESE - WSW

SLOPE																							
10 PCT				20 PCT				30 PCT				40 PCT				50 PCT							
THETA		ALPHA		LY	SS	THETA		ALPHA		LY	SS	THETA		ALPHA		LY	SS	THETA		ALPHA			
43.6	7.3	40.8	13.9			37.8	19.6	34.7	24.7			31.6	29.0										
JUN 22 JUN 12 JUN 1 MAY 18 MAY 3 MAY 10 APR 19 APR 4 APR 9 MAR 21 MAR 7 FEB 20 FEB 7 JAN 23 JAN 10 DEC 3 DEC 22	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY		
	-7.78	7.14	1023.0	-7.78	6.55	1019.5	-7.78	6.00	1013.3	-7.78	5.52	1004.3	-7.78	5.10	993.0	-7.78	5.10	993.0	-7.78	5.10	993.0		
	-7.65	7.02	1001.1	-7.65	6.43	999.8	-7.65	5.91	995.7	-7.65	5.44	988.8	-7.65	5.02	979.5	-7.65	5.02	979.5	-7.65	5.02	979.5		
	-7.42	6.81	962.9	-7.42	6.25	965.3	-7.42	5.74	964.7	-7.42	5.29	961.2	-7.42	4.90	955.0	-7.42	4.90	955.0	-7.42	4.90	955.0		
	-7.12	6.54	907.5	-7.12	6.00	914.7	-7.12	5.52	918.8	-7.12	5.10	919.8	-7.12	4.72	917.8	-7.12	4.72	917.8	-7.12	4.72	917.8		
	-6.77	6.22	836.4	-6.77	5.71	848.9	-6.77	5.26	858.3	-6.77	4.87	864.4	-6.77	4.52	867.2	-6.77	4.52	867.2	-6.77	4.52	867.2		
	-6.39	5.87	753.4	-6.39	5.40	771.2	-6.39	4.98	785.9	-6.39	4.62	797.1	-6.39	4.30	804.8	-6.39	4.30	804.8	-6.39	4.30	804.8		
	-6.00	5.51	661.7	-6.00	5.08	684.3	-6.00	4.69	703.8	-6.00	4.36	719.7	-6.00	4.06	731.8	-6.00	4.06	731.8	-6.00	4.06	731.8		
	-5.61	5.15	568.2	-5.61	4.75	594.6	-5.61	4.40	617.9	-5.61	4.09	637.6	-5.61	3.83	653.4	-5.61	3.83	653.4	-5.61	3.83	653.4		
	-5.23	4.81	479.6	-5.23	4.44	508.5	-5.23	4.12	534.5	-5.23	3.84	550.9	-5.23	3.61	575.4	-5.23	3.61	575.4	-5.23	3.61	575.4		
	-4.88	4.49	401.1	-4.88	4.15	431.5	-4.88	3.86	459.1	-4.88	3.62	483.1	-4.88	3.42	503.3	-4.88	3.42	503.3	-4.88	3.42	503.3		
	-4.58	4.21	338.9	-4.58	3.90	369.8	-4.58	3.64	398.0	-4.58	3.42	428.8	-4.58	3.23	443.9	-4.58	3.23	443.9	-4.58	3.23	443.9		
-4.35	4.01	295.9	-4.35	3.72	326.8	-4.35	3.48	355.1	-4.35	3.27	380.0	-4.35	3.11	401.4	-4.35	3.11	401.4	-4.35	3.11	401.4			
-4.22	3.88	271.2	-4.22	3.61	301.9	-4.22	3.38	330.1	-4.22	3.19	355.0	-4.22	3.03	376.4	-4.22	3.03	376.4	-4.22	3.03	376.4			
YEAR				R.I.e				YEAR				R.I.e				YEAR				R.I.e			
241.087				.4587				259.640				.4712				259.6127				.4816			
THETA				ALPHA				THETA				ALPHA				THETA				ALPHA			
28.7				32.8				25.9				36.1				23.3				38.9			
SR				SS				LY				SR				SS				LY			
-7.78				4.73				980.0				-7.78				4.41				965.7			
-7.65				4.66				968.2				-7.65				4.35				955.5			
-7.42				4.55				946.6				-7.42				4.25				936.5			
-7.12				4.40				913.3				-7.12				4.11				906.7			
-6.77				4.22				867.1				-6.77				3.95				864.5			
-6.39				4.02				809.2				-6.39				3.78				810.7			
-6.00				3.81				740.3				-6.00				3.59				745.8			
-5.61				3.61				665.5				-5.61				3.41				674.3			
-5.23				3.41				590.2				-5.23				3.24				601.6			
-4.88				3.23				519.8				-4.88				3.08				533.0			
-4.58				3.07				461.3				-4.58				2.94				473.5			
-4.35				2.96				419.3				-4.35				2.84				433.9			
-4.22				2.89				394.4				-4.22				2.78				409.2			
YEAR				R.I.e				YEAR				R.I.e				YEAR				R.I.e			
262.435				.4993				263.418				.5012				263.608				.5015			
THETA				ALPHA				THETA				ALPHA				THETA				ALPHA			
262.294				.4990				262.294				.5007				262.294				.4990			

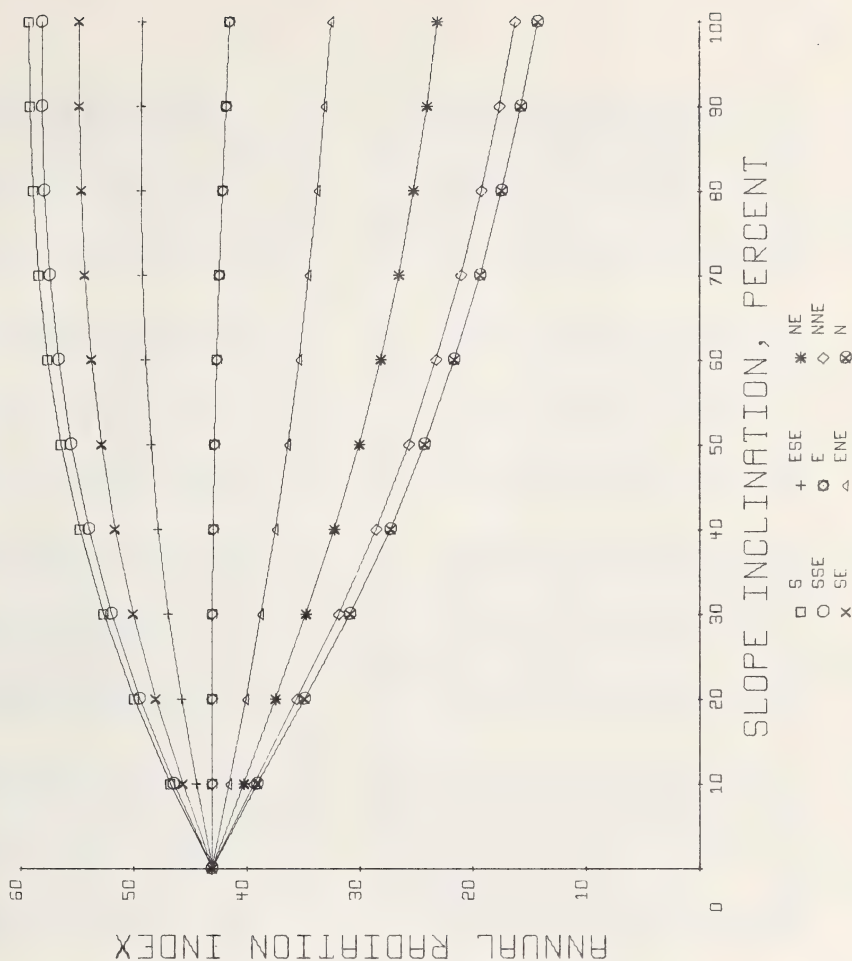
NOTE - FOR ASPECTS WITH WEST COMPONENTS, THE TIME AND SIGN OF SR AND SS ARE REVERSED.

LATITUDE 46 N
ASPECT E - W

	SLOPE						SLOPE						SLOPE						SLOPE											
	10 PCT			20 PCT			30 PCT			40 PCT			50 PCT			60 PCT			70 PCT			80 PCT			90 PCT			100 PCT		
	THETA	ALPHA	R.I.	THETA	ALPHA	R.I.	THETA	ALPHA	R.I.	THETA	ALPHA	R.I.	THETA	ALPHA	R.I.	THETA	ALPHA	R.I.	THETA	ALPHA	R.I.	THETA	ALPHA	R.I.	THETA	ALPHA	R.I.	THETA	ALPHA	R.I.
JUN 22	-7.78	7.22	1021.2	-7.78	6.64	1014.7	-7.78	6.07	1005.2	-7.78	5.54	993.3	-7.78	5.05	980.1	-7.78	4.61	965.9	-7.78	4.22	951.3	-7.78	3.88	936.6	-7.78	3.58	922.2	-7.78	3.31	908.1
JUN 1 JUL 12	-7.65	7.08	997.3	-7.65	6.51	991.4	-7.65	5.95	982.6	-7.65	5.42	971.7	-7.65	4.94	959.3	-7.65	4.51	946.1	-7.65	4.13	932.4	-7.65	3.79	918.6	-7.65	3.50	905.0	-7.65	3.24	891.7
MAY 18 JUL 27	-7.42	6.86	956.0	-7.42	6.29	950.4	-7.42	5.74	943.3	-7.42	5.23	933.9	-7.42	4.76	923.2	-7.42	4.34	910.0	-7.42	3.97	899.4	-7.42	3.65	887.1	-7.42	3.37	874.8	-7.42	3.12	862.7
MAY 3 AUG 10	-7.12	6.56	896.4	-7.12	6.00	892.4	-7.12	5.47	886.6	-7.12	4.97	879.2	-7.12	4.52	870.6	-7.12	4.10	857.4	-7.12	3.73	845.1	-7.12	3.42	832.9	-7.12	3.13	820.7	-7.12	2.85	808.5
APR 19 AUG 25	-6.77	6.21	820.5	-6.77	5.67	816.0	-6.77	5.15	814.1	-6.77	4.67	809.0	-6.77	4.24	802.9	-6.77	3.83	790.7	-6.77	3.46	778.4	-6.77	3.12	766.2	-6.77	2.80	754.0	-6.77	2.50	741.8
APR 4 SEP 9	-6.39	5.84	732.9	-6.39	5.30	731.8	-6.39	4.80	729.9	-6.39	4.34	727.2	-6.39	3.93	723.7	-6.39	3.52	711.5	-6.39	3.16	700.3	-6.39	2.82	689.1	-6.39	2.51	677.9	-6.39	2.22	666.7
MAR 21 SEP 23	-6.00	5.45	637.2	-6.00	4.93	637.4	-6.00	4.44	637.4	-6.00	4.00	637.0	-6.00	3.62	635.9	-6.00	3.22	624.1	-6.00	2.88	612.3	-6.00	2.57	600.5	-6.00	2.27	588.7	-6.00	2.00	576.9
MAR 7 OCT 8	-5.61	5.07	540.5	-5.61	4.55	541.9	-5.61	4.08	543.6	-5.61	3.67	545.2	-5.61	3.30	546.2	-5.61	2.93	534.4	-5.61	2.60	522.6	-5.61	2.30	510.8	-5.61	2.00	499.0	-5.61	1.73	487.2
FEB 20 OCT 22	-5.23	4.69	449.7	-5.23	4.19	452.0	-5.23	3.74	455.1	-5.23	3.34	458.2	-5.23	2.99	460.9	-5.23	2.64	454.1	-5.23	2.33	442.3	-5.23	2.04	430.5	-5.23	1.75	418.7	-5.23	1.48	406.9
FEB 7 NOV 5	-4.88	4.35	370.2	-4.88	3.85	373.2	-4.88	3.42	377.2	-4.88	3.04	381.3	-4.88	2.71	385.2	-4.88	2.38	379.3	-4.88	2.07	373.4	-4.88	1.78	367.5	-4.88	1.49	361.6	-4.88	1.22	355.7
JAN 23 NOV 19	-4.58	4.05	307.7	-4.58	3.57	311.1	-4.58	3.14	315.6	-4.58	2.74	320.5	-4.58	2.41	325.0	-4.58	2.08	319.1	-4.58	1.77	313.2	-4.58	1.48	307.3	-4.58	1.19	301.4	-4.58	0.92	295.5
JAN 10 DEC 3	-4.35	3.83	264.9	-4.35	3.35	268.5	-4.35	2.94	273.5	-4.35	2.59	278.4	-4.35	2.30	283.3	-4.35	1.97	287.3	-4.35	1.66	281.4	-4.35	1.37	275.5	-4.35	1.08	269.6	-4.35	0.81	263.7
DEC 22	-4.22	3.69	240.4	-4.22	3.22	244.1	-4.22	2.82	249.0	-4.22	2.47	254.3	-4.22	2.19	259.3	-4.22	1.86	258.4	-4.22	1.55	252.5	-4.22	1.26	246.6	-4.22	0.97	240.7	-4.22	0.70	234.8
JUN 22	-7.78	4.61	965.9	-7.78	4.22	951.3	-7.78	3.88	936.6	-7.78	3.58	922.2	-7.78	3.31	908.1	-7.78	3.06	894.0	-7.78	2.81	879.9	-7.78	2.57	865.8	-7.78	2.33	851.7	-7.78	2.10	837.6
JUN 1 JUL 12	-7.65	4.51	946.1	-7.65	4.13	932.4	-7.65	3.79	918.6	-7.65	3.50	905.0	-7.65	3.24	891.7	-7.65	3.00	877.6	-7.65	2.76	863.5	-7.65	2.53	849.4	-7.65	2.30	835.3	-7.65	2.07	821.2
MAY 18 JUL 27	-7.42	4.34	911.6	-7.42	3.97	899.4	-7.42	3.65	887.1	-7.42	3.37	874.8	-7.42	3.12	862.7	-7.42	2.88	850.6	-7.42	2.64	838.5	-7.42	2.41	826.4	-7.42	2.18	814.3	-7.42	1.94	802.2
MAY 3 AUG 10	-7.12	4.12	861.1	-7.12	3.73	851.1	-7.12	3.46	840.7	-7.12	3.19	830.3	-7.12	2.95	819.9	-7.12	2.71	809.5	-7.12	2.47	799.1	-7.12	2.24	788.7	-7.12	2.01	778.3	-7.12	1.78	767.9
APR 19 AUG 25	-6.77	3.86	795.9	-6.77	3.52	788.3	-6.77	3.23	780.3	-6.77	2.98	772.0	-6.77	2.74	763.6	-6.77	2.50	755.2	-6.77	2.26	746.8	-6.77	2.03	738.4	-6.77	1.80	730.0	-6.77	1.57	721.6
APR 4 SEP 9	-6.39	3.57	719.3	-6.39	3.26	714.2	-6.39	2.99	708.6	-6.39	2.75	702.6	-6.39	2.51	696.3	-6.39	2.27	690.0	-6.39	2.03	683.7	-6.39	1.80	677.4	-6.39	1.57	671.1	-6.39	1.34	664.8
MAR 21 SEP 23	-6.00	3.28	634.1	-6.00	2.98	631.4	-6.00	2.73	628.1	-6.00	2.51	624.3	-6.00	2.32	620.0	-6.00	2.08	613.7	-6.00	1.84	607.4	-6.00	1.61	601.1	-6.00	1.38	594.8	-6.00	1.15	588.5
MAR 7 OCT 8	-5.61	2.98	546.5	-5.61	2.71	546.0	-5.61	2.47	544.7	-5.61	2.27	542.8	-5.61	2.07	540.4	-5.61	1.87	538.0	-5.61	1.67	535.6	-5.61	1.47	533.2	-5.61	1.27	530.8	-5.61	1.07	528.4
FEB 20 OCT 22	-5.23	2.70	462.8	-5.23	2.45	464.0	-5.23	2.23	464.4	-5.23	2.04	464.1	-5.23	1.88	463.2	-5.23	1.71	461.3	-5.23	1.54	459.4	-5.23	1.37	457.5	-5.23	1.20	455.6	-5.23	1.03	453.7
FEB 7 NOV 5	-4.88	2.44	388.4	-4.88	2.20	390.8	-4.88	2.00	392.3	-4.88	1.83	393.2	-4.88	1.69	393.4	-4.88	1.52	393.0	-4.88	1.36	391.1	-4.88	1.20	389.2	-4.88	1.04	387.3	-4.88	0.88	385.4
JAN 23 NOV 19	-4.58	2.21	328.9	-4.58	2.00	332.1	-4.58	1.81	334.4	-4.58	1.66	336.0	-4.58	1.52	337.0	-4.58	1.38	335.1	-4.58	1.23	333.2	-4.58	1.08	331.3	-4.58	0.93	329.4	-4.58	0.78	327.5
JAN 10 DEC 3	-4.35	2.05	287.6	-4.35	1.84	291.2	-4.35	1.67	293.9	-4.35	1.53	295.9	-4.35	1.40	297.5	-4.35	1.27	295.6	-4.35	1.14	293.7	-4.35	1.01	291.8	-4.35	0.88	289.9	-4.35	0.75	288.0
DEC 22	-4.22	1.95	263.8	-4.22	1.75	267.5	-4.22	1.59	270.4	-4.22	1.45	272.7	-4.22	1.33	274.3	-4.22	1.20	272.4	-4.22	1.07	270.5	-4.22	0.94	268.6	-4.22	0.81	266.7	-4.22	0.68	264.8

NOTE - FOR ASPECTS WITH WEST COMPONENTS, THE TIME AND SIGN OF SR AND SS ARE REVERSED.

RADIATION INDEXES FOR VARIOUS FACETS AT LATITUDE 48 N



HORIZONTAL SURFACE

LATITUDE 48 N

	SR	SS	LY
JUN 22	-7.93	7.93	1022.5
JUN 1 JUL 12	-7.77	7.77	996.5
MAY 18 JUL 27	-7.53	7.53	951.7
MAY 3 AUG 10	-7.20	7.20	887.5
APR 19 AUG 25	-6.82	6.82	806.5
APR 4 SEP 9	-6.42	6.42	713.9
MAR 21 SEP 23	-6.00	6.00	613.7
MAR 7 OCT 8	-5.58	5.58	513.4
FEB 20 OCT 22	-5.18	5.18	420.2
FEB 7 NOV 5	-4.80	4.80	339.5
JAN 23 NOV 19	-4.47	4.47	276.6
JAN 10 DEC 3	-4.23	4.23	233.8
DEC 22	-4.08	4.08	209.6

YEAR R.I.
226.745 .4314

LATITUDE 48 N
ASPECT N -

	10 PCT						20 PCT						30 PCT						40 PCT						50 PCT					
	SLOPE			SLOPE			SLOPE			SLOPE			SLOPE			SLOPE			SLOPE			SLOPE			SLOPE			SLOPE		
	THETA	ALPHA	LY	SR	SS	LY	THETA	ALPHA	LY	SR	SS	LY	THETA	ALPHA	LY	SR	SS	LY	THETA	ALPHA	LY	SR	SS	LY	THETA	ALPHA	LY	SR	SS	LY
JUN 22	-7.93	7.93	1013.6	-7.93	7.93	995.1	-7.93	7.93	968.4	-7.93	7.93	935.2	-7.93	7.93	900.0	-7.93	7.93	865.6	-7.93	7.93	831.0	-7.93	7.93	796.4	-7.93	7.93	761.8	-7.93	7.93	727.2
JUN 1 JUL 12	-7.77	7.77	982.1	-7.77	7.77	958.5	-7.77	7.77	927.2	-7.77	7.77	890.0	-7.77	7.77	854.4	-7.77	7.77	818.8	-7.77	7.77	783.2	-7.77	7.77	747.6	-7.77	7.77	712.0	-7.77	7.77	676.4
MAY 18 JUL 27	-7.53	7.53	928.3	-7.53	7.53	896.5	-7.53	7.53	865.6	-7.53	7.53	831.0	-7.53	7.53	796.4	-7.53	7.53	761.8	-7.53	7.53	727.2	-7.53	7.53	692.6	-7.53	7.53	658.0	-7.53	7.53	623.4
MAY 3 AUG 10	-7.20	7.20	852.5	-7.20	7.20	810.1	-7.20	7.20	768.4	-7.20	7.20	726.3	-7.20	7.20	684.2	-7.20	7.20	642.1	-7.20	7.20	600.0	-7.20	7.20	557.9	-7.20	7.20	515.8	-7.20	7.20	473.7
APR 19 AUG 25	-6.82	6.82	758.8	-6.82	6.82	704.7	-6.82	6.82	662.6	-6.82	6.82	620.5	-6.82	6.82	578.4	-6.82	6.82	536.3	-6.82	6.82	494.2	-6.82	6.82	452.1	-6.82	6.82	410.0	-6.82	6.82	367.9
APR 4 SEP 9	-6.42	6.42	653.7	-6.42	6.42	588.5	-6.42	6.42	520.4	-6.42	6.42	451.7	-6.42	6.42	382.9	-6.42	6.42	314.3	-6.42	6.42	245.7	-6.42	6.42	177.1	-6.42	6.42	108.5	-6.42	6.42	39.9
MAR 21 SEP 23	-6.00	6.00	542.7	-6.00	6.00	468.0	-6.00	6.00	391.9	-6.00	6.00	316.7	-6.00	6.00	241.5	-6.00	6.00	166.3	-6.00	6.00	91.1	-6.00	6.00	25.9	-6.00	6.00	-49.3	-6.00	6.00	-124.7
MAR 7 OCT 8	-5.49	5.49	434.5	-5.49	5.49	353.4	-5.49	5.49	272.9	-5.49	5.49	192.4	-5.49	5.49	111.9	-5.49	5.49	31.4	-5.49	5.49	-49.3	-5.49	5.49	-124.7	-5.49	5.49	-200.1	-5.49	5.49	-275.5
FEB 20 OCT 22	-4.98	4.98	336.7	-4.98	4.98	253.3	-4.98	4.98	173.4	-4.98	4.98	90.0	-4.98	4.98	6.6	-4.98	4.98	-77.8	-4.98	4.98	-153.2	-4.98	4.98	-228.6	-4.98	4.98	-304.0	-4.98	4.98	-379.4
FEB 7 NOV 5	-4.51	4.51	254.5	-4.51	4.51	172.5	-4.51	4.51	91.6	-4.51	4.51	10.1	-4.51	4.51	-70.9	-4.51	4.51	-146.3	-4.51	4.51	-221.7	-4.51	4.51	-297.1	-4.51	4.51	-372.5	-4.51	4.51	-447.9
JAN 23 NOV 19	-4.10	4.10	192.5	-4.10	4.10	111.2	-4.10	4.10	30.3	-4.10	4.10	-40.6	-4.10	4.10	-115.8	-4.10	4.10	-191.2	-4.10	4.10	-266.6	-4.10	4.10	-342.0	-4.10	4.10	-417.4	-4.10	4.10	-492.8
JAN 10 DEC 3	-3.78	3.78	151.6	-3.78	3.78	77.8	-3.78	3.78	20.0	-3.78	3.78	-50.0	-3.78	3.78	-125.0	-3.78	3.78	-200.0	-3.78	3.78	-275.0	-3.78	3.78	-350.0	-3.78	3.78	-425.0	-3.78	3.78	-500.0
DEC 22	-3.58	3.58	129.0	-3.58	3.58	58.5	-3.58	3.58	8.0	-3.58	3.58	-67.0	-3.58	3.58	-142.0	-3.58	3.58	-217.0	-3.58	3.58	-292.0	-3.58	3.58	-367.0	-3.58	3.58	-442.0	-3.58	3.58	-517.0
JUN 22	-7.93	7.93	857.1	-7.93	7.93	815.6	-7.93	7.93	774.5	-7.93	7.93	733.4	-7.93	7.93	692.3	-7.93	7.93	651.2	-7.93	7.93	610.1	-7.93	7.93	569.0	-7.93	7.93	527.9	-7.93	7.93	486.8
JUN 1 JUL 12	-7.77	7.77	805.6	-7.77	7.77	761.9	-7.77	7.77	718.8	-7.77	7.77	675.7	-7.77	7.77	632.6	-7.77	7.77	589.5	-7.77	7.77	546.4	-7.77	7.77	503.3	-7.77	7.77	460.2	-7.77	7.77	417.1
MAY 18 JUL 27	-7.53	7.53	720.0	-7.53	7.53	672.5	-7.53	7.53	626.3	-7.53	7.53	580.1	-7.53	7.53	533.9	-7.53	7.53	487.7	-7.53	7.53	441.5	-7.53	7.53	395.3	-7.53	7.53	349.1	-7.53	7.53	302.9
MAY 3 AUG 10	-7.20	7.20	603.3	-7.20	7.20	551.2	-7.20	7.20	501.5	-7.20	7.20	451.8	-7.20	7.20	402.1	-7.20	7.20	352.4	-7.20	7.20	302.7	-7.20	7.20	253.0	-7.20	7.20	203.3	-7.20	7.20	153.6
APR 19 AUG 25	-6.82	6.82	465.6	-6.82	6.82	408.8	-6.82	6.82	355.4	-6.82	6.82	302.7	-6.82	6.82	249.9	-6.82	6.82	197.2	-6.82	6.82	144.5	-6.82	6.82	91.8	-6.82	6.82	39.1	-6.82	6.82	-13.6
APR 4 SEP 9	-6.42	6.42	319.6	-6.42	6.42	258.7	-6.42	6.42	202.3	-6.42	6.42	141.4	-6.42	6.42	80.5	-6.42	6.42	29.6	-6.42	6.42	-31.3	-6.42	6.42	-81.9	-6.42	6.42	-152.5	-6.42	6.42	-223.9
MAR 21 SEP 23	-6.00	6.00	175.5	-6.00	6.00	111.8	-6.00	6.00	53.4	-6.00	6.00	-7.0	-6.00	6.00	-61.4	-6.00	6.00	-136.8	-6.00	6.00	-212.2	-6.00	6.00	-287.6	-6.00	6.00	-363.0	-6.00	6.00	-438.4
MAR 7 OCT 8	-3.97	3.97	59.2	-3.97	3.97	2.4	-3.97	3.97	-44.0	-3.97	3.97	-88.0	-3.97	3.97	-132.0	-3.97	3.97	-176.0	-3.97	3.97	-220.0	-3.97	3.97	-264.0	-3.97	3.97	-308.0	-3.97	3.97	-352.0
FEB 20 OCT 22	-3.56	3.56	2.2	-3.56	3.56	-44.0	-3.56	3.56	-88.0	-3.56	3.56	-132.0	-3.56	3.56	-176.0	-3.56	3.56	-220.0	-3.56	3.56	-264.0	-3.56	3.56	-308.0	-3.56	3.56	-352.0	-3.56	3.56	-396.0
FEB 7 NOV 5	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0
JAN 23 NOV 19	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0
JAN 10 DEC 3	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0
DEC 22	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0

NOTE - FOR ASPECTS WITH WEST COMPONENTS, THE TIME AND SIGN OF SR AND SS ARE REVERSED.

LATITUDE 48 N
ASPECT S -

		SLOPE																				
		10 PCT			20 PCT			30 PCT			40 PCT			50 PCT								
		THETA	ALPHA		THETA	ALPHA		THETA	ALPHA		THETA	ALPHA		THETA	ALPHA		THETA	ALPHA		THETA	ALPHA	
		42.3	0.0		36.7	0.0		31.3	0.0		26.2	0.0		21.4	0.0							
		SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY
JUN 22		-7.55	7.55	1023.8	-7.26	7.26	1019.3	-7.02	7.02	1008.6	-6.82	6.82	992.4	-6.66	6.66	971.8						
JUN 1 JUL 12		-7.43	7.43	1003.2	-7.17	7.17	1003.6	-6.95	6.95	997.4	-6.76	6.76	985.3	-6.61	6.61	968.2						
MAY 18 JUL 27		-7.24	7.24	967.2	-7.01	7.01	975.7	-6.82	6.82	977.0	-6.66	6.66	971.7	-6.53	6.53	960.9						
MAY 3 AUG 10		-6.98	6.98	914.7	-6.80	6.80	934.1	-6.65	6.65	945.6	-6.53	6.53	949.8	-6.42	6.42	947.5						
APR 19 AUG 25		-6.67	6.67	846.8	-6.55	6.55	878.8	-6.45	6.45	902.3	-6.36	6.36	917.7	-6.29	6.29	925.8						
APR 4 SEP 9		-6.34	6.34	767.1	-6.28	6.28	812.0	-6.23	6.23	848.1	-6.19	6.19	875.5	-6.15	6.15	896.9						
MAR 21 SEP 23		-6.00	6.00	678.5	-6.00	6.00	735.5	-6.00	6.00	783.6	-6.00	6.00	822.9	-6.00	6.00	853.7						
MAR 7 OCT 8		-5.58	5.58	587.4	-5.58	5.58	654.2	-5.58	5.58	712.6	-5.58	5.58	762.1	-5.58	5.58	802.9						
FEB 20 OCT 22		-5.18	5.18	500.2	-5.18	5.18	573.7	-5.18	5.18	639.3	-5.18	5.18	696.2	-5.18	5.18	746.4						
FEB 7 NOV 5		-4.80	4.80	422.4	-4.80	4.80	499.6	-4.80	4.80	569.3	-4.80	4.80	630.7	-4.80	4.80	683.6						
JAN 23 NOV 19		-4.47	4.47	360.2	-4.47	4.47	438.6	-4.47	4.47	510.0	-4.47	4.47	573.5	-4.47	4.47	626.8						
JAN 10 DEC 3		-4.23	4.23	316.8	-4.23	4.23	395.0	-4.23	4.23	466.7	-4.23	4.23	530.8	-4.23	4.23	586.9						
DEC 22		-4.08	4.08	291.7	-4.08	4.08	369.4	-4.08	4.08	440.7	-4.08	4.08	504.7	-4.08	4.08	561.0						
		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.	
		246.071	.4682		262.996	.5004		277.162	.5273		288.521	.5489		297.218	.5655							
		SLOPE																				
		60 PCT			70 PCT			80 PCT			90 PCT			100 PCT								
		THETA	ALPHA		THETA	ALPHA		THETA	ALPHA		THETA	ALPHA		THETA	ALPHA		THETA	ALPHA		THETA	ALPHA	
		17.0	0.0		13.0	0.0		9.3	0.0		6.0	0.0		3.0	0.0							
		SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY
JUN 22		-6.51	6.51	947.9	-6.38	6.38	922.0	-6.27	6.27	895.3	-6.18	6.18	868.5	-6.09	6.09	842.1						
JUN 1 JUL 12		-6.47	6.47	947.6	-6.36	6.36	924.6	-6.25	6.25	900.3	-6.16	6.16	875.7	-6.08	6.08	851.1						
MAY 18 JUL 27		-6.41	6.41	945.7	-6.31	6.31	927.6	-6.22	6.22	907.6	-6.14	6.14	886.6	-6.07	6.07	865.3						
MAY 3 AUG 10		-6.33	6.33	940.1	-6.25	6.25	928.9	-6.18	6.18	915.0	-6.11	6.11	899.4	-6.06	6.06	882.8						
APR 19 AUG 25		-6.23	6.23	927.9	-6.17	6.17	925.1	-6.12	6.12	918.9	-6.08	6.08	910.0	-6.04	6.04	899.5						
APR 4 SEP 9		-6.12	6.12	907.4	-6.09	6.09	914.2	-6.06	6.06	916.5	-6.04	6.04	915.4	-6.02	6.02	911.7						
MAR 21 SEP 23		-6.00	6.00	876.9	-6.00	6.00	893.6	-6.00	6.00	905.0	-6.00	6.00	912.0	-6.00	6.00	915.8						
MAR 7 OCT 8		-5.58	5.58	835.6	-5.58	5.58	861.3	-5.58	5.58	880.9	-5.58	5.58	895.6	-5.58	5.58	906.4						
FEB 20 OCT 22		-5.18	5.18	784.3	-5.18	5.18	816.8	-5.18	5.18	842.9	-5.18	5.18	863.5	-5.18	5.18	879.8						
FEB 7 NOV 5		-4.80	4.80	728.3	-4.80	4.80	765.4	-4.80	4.80	795.9	-4.80	4.80	820.7	-4.80	4.80	840.9						
JAN 23 NOV 19		-4.47	4.47	676.0	-4.47	4.47	715.8	-4.47	4.47	748.8	-4.47	4.47	776.1	-4.47	4.47	798.7						
JAN 10 DEC 3		-4.23	4.23	635.1	-4.23	4.23	676.0	-4.23	4.23	710.3	-4.23	4.23	738.8	-4.23	4.23	762.6						
DEC 22		-4.08	4.08	609.4	-4.08	4.08	650.7	-4.08	4.08	685.4	-4.08	4.08	714.4	-4.08	4.08	738.7						
		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.	
		303.532	.5775		307.834	.5857		310.488	.5907		311.847	.5933		312.218	.5940							

NOTE - FOR ASPECTS WITH WEST COMPONENTS, THE TIME AND SIGN OF SR AND SS ARE REVERSED.

LATITUDE 48 N
ASPECT NNE - NNW

	10 PCT						SLOPE						30 PCT						40 PCT						50 PCT					
	THETA			ALPHA			THETA			ALPHA			THETA			ALPHA			THETA			ALPHA			THETA			ALPHA		
	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY
JUN 22	-7.93	7.93	1013.9	-7.93	7.93	995.7	-7.93	7.93	989.2	-7.93	7.93	936.2	-7.93	7.93	898.7	-7.93	7.93	852.1	-7.93	7.93	807.6	-7.93	7.93	762.1	-7.93	7.93	717.6	-7.93	7.93	672.1
JUN 1 JUL 12	-7.77	7.77	982.8	-7.77	7.77	959.9	-7.77	7.77	929.3	-7.77	7.77	892.7	-7.77	7.77	852.1	-7.77	7.77	807.6	-7.77	7.77	762.1	-7.77	7.77	717.6	-7.77	7.77	672.1	-7.77	7.77	627.6
FEB 20 OCT 22	-7.53	7.53	929.8	-7.53	7.53	899.3	-7.53	7.53	868.6	-7.53	7.53	838.1	-7.53	7.53	807.6	-7.53	7.53	777.1	-7.53	7.53	746.6	-7.53	7.53	716.1	-7.53	7.53	685.6	-7.53	7.53	655.1
MAY 18 JUL 27	-7.20	7.20	854.9	-7.20	7.20	814.7	-7.20	7.20	774.5	-7.20	7.20	734.3	-7.20	7.20	694.1	-7.20	7.20	653.9	-7.20	7.20	613.7	-7.20	7.20	573.5	-7.20	7.20	533.3	-7.20	7.20	493.1
MAY 3 AUG 10	-6.82	6.82	762.1	-6.82	6.82	711.4	-6.82	6.82	660.6	-6.82	6.82	610.0	-6.82	6.82	559.4	-6.82	6.82	508.8	-6.82	6.82	458.2	-6.82	6.82	407.6	-6.82	6.82	357.0	-6.82	6.82	306.4
APR 19 AUG 25	-6.42	6.42	658.2	-6.42	6.42	607.6	-6.42	6.42	557.0	-6.42	6.42	506.4	-6.42	6.42	455.8	-6.42	6.42	405.2	-6.42	6.42	354.6	-6.42	6.42	304.0	-6.42	6.42	253.4	-6.42	6.42	202.8
APR 4 SEP 9	-6.00	6.00	548.4	-6.00	6.00	497.8	-6.00	6.00	447.2	-6.00	6.00	396.6	-6.00	6.00	346.0	-6.00	6.00	295.4	-6.00	6.00	244.8	-6.00	6.00	194.2	-6.00	6.00	143.6	-6.00	6.00	93.0
MAR 21 SEP 23	-5.58	5.58	441.2	-5.58	5.58	390.6	-5.58	5.58	340.0	-5.58	5.58	289.4	-5.58	5.58	238.8	-5.58	5.58	188.2	-5.58	5.58	137.6	-5.58	5.58	87.0	-5.58	5.58	36.4	-5.58	5.58	-14.2
MAR 7 OCT 8	-5.18	5.18	343.9	-5.18	5.18	293.3	-5.18	5.18	242.7	-5.18	5.18	192.1	-5.18	5.18	141.5	-5.18	5.18	90.9	-5.18	5.18	40.3	-5.18	5.18	-10.3	-5.18	5.18	-60.7	-5.18	5.18	-111.1
FEB 20 OCT 22	-4.78	4.78	261.8	-4.78	4.78	211.2	-4.78	4.78	160.6	-4.78	4.78	110.0	-4.78	4.78	59.4	-4.78	4.78	8.8	-4.78	4.78	-41.8	-4.78	4.78	-92.2	-4.78	4.78	-142.6	-4.78	4.78	-193.0
FEB 7 NOV 5	-4.38	4.38	199.6	-4.38	4.38	149.0	-4.38	4.38	98.4	-4.38	4.38	47.8	-4.38	4.38	-3.8	-4.38	4.38	-54.2	-4.38	4.38	-104.6	-4.38	4.38	-155.0	-4.38	4.38	-205.4	-4.38	4.38	-255.8
JAN 23 NOV 19	-3.98	3.98	158.4	-3.98	3.98	107.8	-3.98	3.98	57.2	-3.98	3.98	6.6	-3.98	3.98	-43.8	-3.98	3.98	-94.2	-3.98	3.98	-144.6	-3.98	3.98	-195.0	-3.98	3.98	-245.4	-3.98	3.98	-295.8
JAN 10 DEC 3	-3.58	3.58	135.6	-3.58	3.58	85.0	-3.58	3.58	34.4	-3.58	3.58	-16.2	-3.58	3.58	-66.6	-3.58	3.58	-117.0	-3.58	3.58	-167.4	-3.58	3.58	-217.8	-3.58	3.58	-268.2	-3.58	3.58	-318.6
DEC 22	-3.18	3.18	112.8	-3.18	3.18	62.2	-3.18	3.18	11.6	-3.18	3.18	-38.6	-3.18	3.18	-89.0	-3.18	3.18	-139.4	-3.18	3.18	-189.8	-3.18	3.18	-240.2	-3.18	3.18	-290.6	-3.18	3.18	-341.0

NOTE - FOR ASPECTS WITH WEST COMPONENTS, THE TIME AND SIGN OF SR AND SS ARE REVERSED.

LATITUDE 48 N
ASPECT SSE - SSW

		10 PCT			20 PCT			30 PCT			40 PCT			50 PCT		
		THETA	ALPHA		THETA	ALPHA		THETA	ALPHA		THETA	ALPHA		THETA	ALPHA	
		42.7	3.0		37.4	5.4		32.3	7.5		27.4	9.2		22.8	10.7	
		SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY
JUN 22		-7.77	7.38	1023.9	-7.66	6.93	1020.2	-7.56	6.56	1011.1	-7.48	6.25	996.9	-7.42	5.99	978.4
JUN 1 JUL 12		-7.65	7.26	1002.9	-7.56	6.84	1003.9	-7.48	6.49	990.1	-7.42	6.19	988.7	-7.37	5.94	973.9
MAY 18 JUL 27		-7.46	7.06	966.3	-7.40	6.68	975.0	-7.35	6.36	977.3	-7.31	6.08	973.6	-7.28	5.85	964.7
MAY 3 AUG 10		-7.19	6.80	913.0	-7.18	6.46	932.0	-7.17	6.18	944.1	-7.17	5.94	949.4	-7.16	5.74	948.8
APR 19 AUG 25		-6.82	6.48	844.2	-6.82	6.20	875.0	-6.82	5.97	898.3	-6.82	5.77	914.2	-6.82	5.60	923.5
APR 4 SEP 9		-6.42	6.15	763.5	-6.42	5.93	806.0	-6.42	5.74	840.7	-6.42	5.58	867.5	-6.42	5.45	886.9
MAR 21 SEP 23		-6.00	5.80	673.8	-6.00	5.64	726.9	-6.00	5.50	772.0	-6.00	5.39	808.9	-6.00	5.29	837.8
MAR 7 OCT 8		-5.58	5.45	581.8	-5.58	5.35	643.4	-5.58	5.26	697.1	-5.58	5.19	742.5	-5.58	5.13	779.7
FEB 7 NOV 5		-5.18	5.12	494.0	-5.18	5.07	561.6	-5.18	5.04	621.5	-5.18	5.00	673.3	-5.18	4.98	716.9
JAN 23 NOV 19		-4.80	4.80	416.0	-4.80	4.80	486.9	-4.80	4.80	550.7	-4.80	4.80	606.7	-4.80	4.80	654.7
JAN 10 DEC 3		-4.47	4.47	353.7	-4.47	4.47	425.8	-4.47	4.47	494.4	-4.47	4.47	549.4	-4.47	4.47	599.8
DEC 22		-4.23	4.23	310.4	-4.23	4.23	382.4	-4.23	4.23	448.2	-4.23	4.23	506.9	-4.23	4.23	558.1
		-4.08	4.08	285.4	-4.08	4.08	356.9	-4.08	4.08	422.5	-4.08	4.08	481.1	-4.08	4.08	532.5
		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.	
		244.653	4.655		260.410	4.955		273.643	5.206		284.274	5.409		292.421	5.564	
		60 PCT			70 PCT			80 PCT			90 PCT			100 PCT		
		THETA	ALPHA		THETA	ALPHA		THETA	ALPHA		THETA	ALPHA		THETA	ALPHA	
		18.6	12.0		14.7	13.1		11.2	14.1		8.0	15.0		5.1	15.8	
		SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY
JUN 22		-7.36	5.76	957.0	-7.31	5.56	933.6	-7.27	5.39	909.2	-7.23	5.23	884.7	-7.20	5.10	860.4
JUN 1 JUL 12		-7.32	5.72	955.5	-7.28	5.53	934.9	-7.25	5.36	913.0	-7.21	5.22	890.6	-7.19	5.09	868.2
MAY 18 JUL 27		-7.25	5.65	951.7	-7.23	5.48	935.8	-7.21	5.32	918.1	-7.19	5.19	899.4	-7.17	5.07	880.2
MAY 3 AUG 10		-7.16	5.56	943.3	-7.15	5.41	934.2	-7.15	5.27	922.4	-7.15	5.15	909.0	-7.15	5.04	894.4
APR 19 AUG 25		-6.82	5.45	927.0	-6.82	5.32	926.0	-6.82	5.21	921.5	-6.82	5.10	914.5	-6.82	5.01	905.7
APR 4 SEP 9		-6.42	5.33	895.7	-6.42	5.22	907.2	-6.42	5.13	910.4	-6.42	5.05	910.3	-6.42	4.98	907.7
MAR 21 SEP 23		-6.00	5.20	859.7	-6.00	5.13	875.4	-6.00	5.06	886.1	-6.00	5.00	892.8	-6.00	4.95	896.3
MAR 7 OCT 8		-5.58	5.07	809.3	-5.58	5.03	832.4	-5.58	4.99	849.9	-5.58	4.95	862.7	-5.58	4.92	871.9
FEB 20 OCT 22		-5.18	4.95	752.8	-5.18	4.93	781.8	-5.18	4.91	804.8	-5.18	4.90	822.8	-5.18	4.88	836.8
FEB 7 NOV 5		-4.80	4.80	695.0	-4.80	4.80	728.3	-4.80	4.80	755.5	-4.80	4.80	777.4	-4.80	4.80	795.1
JAN 23 NOV 19		-4.47	4.47	642.6	-4.47	4.47	678.5	-4.47	4.47	708.3	-4.47	4.47	732.7	-4.47	4.47	752.8
JAN 10 DEC 3		-4.23	4.23	602.0	-4.23	4.23	639.1	-4.23	4.23	670.1	-4.23	4.23	695.8	-4.23	4.23	717.1
DEC 22		-4.08	4.08	576.7	-4.08	4.08	614.2	-4.08	4.08	645.7	-4.08	4.08	671.9	-4.08	4.08	693.8
		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.	
		298.334	5.676		302.355	5.753		304.825	5.800		306.073	5.823		306.389	5.829	

NOTE - FOR ASPECTS WITH WEST COMPONENTS, THE TIME AND SIGN OF SR AND SS ARE REVERSED.

LATITUDE 48 N
ASPECT NE - NW

		10 PCT			20 PCT			SLOPE			30 PCT			40 PCT			50 PCT		
		THETA	ALPHA	LY	THETA	ALPHA	LY	THETA	ALPHA	LY	THETA	ALPHA	LY	THETA	ALPHA	LY	THETA	ALPHA	LY
		51.9	6.5		55.2	14.1		58.0	22.5		60.0	31.6		61.2	41.0				
		SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY
JUN 22		-7.93	7.81	1014.8	-7.93	7.65	997.8	-7.93	7.43	972.8	-7.93	7.14	941.9	-7.93	6.75	907.3			
JUN 1 JUL 12		-7.77	7.62	985.0	-7.77	7.43	964.7	-7.77	7.17	937.1	-7.77	6.84	904.4	-7.77	6.41	868.7			
MAY 18 JUL 27		-7.53	7.33	934.1	-7.53	7.09	906.6	-7.53	6.77	877.1	-7.53	6.38	841.5	-7.53	5.91	804.4			
MAY 3 AUG 10		-7.20	6.95	862.0	-7.20	6.64	830.1	-7.20	6.26	793.7	-7.20	5.81	755.1	-7.20	5.30	716.6			
APR 19 AUG 25		-6.82	6.51	772.5	-6.82	6.14	733.8	-6.82	5.70	692.7	-6.82	5.19	651.4	-6.82	4.63	612.2			
APR 4 SEP 9		-6.42	6.04	671.6	-6.42	5.61	626.8	-6.42	5.10	582.0	-6.42	4.55	539.1	-6.42	3.95	500.2			
MAR 21 SEP 23		-6.00	5.56	564.5	-6.00	5.06	515.0	-6.00	4.50	467.9	-6.00	3.89	424.9	-6.00	3.26	387.6			
MAR 7 OCT 8		-5.58	5.08	459.2	-5.58	4.52	407.0	-5.58	3.89	359.3	-5.58	3.24	317.9	-5.58	2.58	283.4			
FEB 20 OCT 22		-5.18	4.62	363.1	-5.18	3.99	310.2	-5.18	3.30	263.8	-5.18	2.59	225.2	-5.18	1.90	194.7			
FEB 7 NOV 5		-4.80	4.18	281.4	-4.80	3.48	229.5	-4.80	2.73	185.8	-4.80	1.97	151.1	-4.80	1.23	125.1			
JAN 23 NOV 19		-4.47	3.79	219.1	-4.47	3.04	169.2	-4.47	2.22	128.8	-4.47	1.40	98.3	-4.47	0.62	76.7			
JAN 10 DEC 3		-4.23	3.50	177.5	-4.23	2.69	129.8	-4.23	1.82	92.5	-4.23	.94	65.6	-4.23	.12	47.7			
DEC 22		-4.08	3.32	154.2	-4.08	2.47	108.2	-4.08	1.56	73.0	-4.08	.64	48.5	-4.08	-.22	32.9			
		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.	
		212.059	.4035		197.258	.3753		183.075	.3483		170.045	.3235		158.499	.3016				
		60 PCT			70 PCT			SLOPE			80 PCT			90 PCT			100 PCT		
		THETA	ALPHA	LY	THETA	ALPHA	LY	THETA	ALPHA	LY	THETA	ALPHA	LY	THETA	ALPHA	LY	THETA	ALPHA	LY
		61.7	50.2		61.7	58.7		61.1	66.3		60.3	72.9		59.3	78.5				
		SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY
JUN 22		-7.93	6.25	871.4	-7.93	5.67	836.2	-7.93	5.06	803.3	-7.93	4.46	773.6	-7.93	3.91	747.1			
JUN 1 JUL 12		-7.77	5.89	832.4	-7.77	5.31	797.4	-7.77	4.72	765.2	-7.77	4.15	736.4	-7.77	3.62	710.8			
MAY 18 JUL 27		-7.53	5.37	767.8	-7.53	4.79	733.4	-7.53	4.22	702.3	-7.53	3.68	674.9	-7.53	3.18	650.9			
MAY 3 AUG 10		-7.20	4.74	680.0	-7.20	4.16	646.8	-7.20	3.61	617.4	-7.20	3.10	592.0	-7.20	2.64	570.1			
APR 19 AUG 25		-6.82	4.06	576.4	-6.82	3.48	545.0	-6.82	2.95	518.0	-6.82	2.46	495.2	-6.82	2.03	475.8			
APR 4 SEP 9		-6.42	3.56	466.2	-6.42	2.79	437.3	-6.42	2.27	413.3	-6.42	1.81	393.5	-6.42	1.40	377.0			
MAR 21 SEP 23		-6.00	2.65	356.3	-6.00	2.09	330.8	-6.00	1.58	310.3	-6.00	1.14	293.9	-6.00	.77	280.5			
MAR 7 OCT 8		-5.58	1.95	255.8	-5.58	1.38	234.3	-5.58	.89	217.6	-5.58	.48	204.6	-5.58	.13	194.4			
FEB 20 OCT 22		-5.18	1.25	171.4	-5.18	.69	154.0	-5.18	.22	141.2	-5.18	-.18	131.6	-5.18	-.50	124.2			
FEB 7 NOV 5		-4.80	.57	106.4	-4.80	.01	93.1	-4.80	-.45	83.8	-4.80	-.81	77.2	-4.80	-1.10	72.3			
JAN 23 NOV 19		-4.47	-.06	62.2	-4.47	-.62	52.6	-4.47	-1.06	46.2	-4.47	-1.39	41.9	-4.47	-1.65	38.9			
JAN 10 DEC 3		-4.23	-.58	36.4	-4.23	-1.14	29.5	-4.23	-1.56	25.2	-4.23	-1.86	22.5	-4.23	-2.09	20.6			
DEC 22		-4.08	-.94	23.7	-4.08	-1.49	18.5	-4.08	-1.89	15.4	-4.08	-2.17	13.5	-4.08	-2.38	12.3			
		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.	
		148.532	.2826		140.062	.2665		132.951	.2530		127.009	.2416		122.000	.2321				

NOTE - FOR ASPECTS WITH WEST COMPONENTS, THE TIME AND SIGN OF SR AND SS ARE REVERSED.

LATITUDE 48 N
ASPECT SE - SW

		10 PCT				20 PCT				SLOPE				30 PCT				40 PCT				50 PCT			
		THETA	ALPHA	LY	SS	THETA	ALPHA	LY	SS	THETA	ALPHA	LY	SS	THETA	ALPHA	LY	SS	THETA	ALPHA	LY	SS	THETA	ALPHA	LY	SS
		43.8	5.6			39.5	10.4							35.2	14.4			30.9	17.8			26.9	20.8		
		SR	SS	LY	SS	SR	SS	LY	SS	SR	SS	LY	SS	SR	SS	LY	SS	SR	SS	LY	SS	SR	SS	LY	SS
JUN 22		-7.93	7.27	1023.9		-7.93	6.71	1022.1		-7.93	6.23	1016.4		-7.93	5.82	1006.9		-7.93	5.02	1006.9		-7.93	5.47	994.0	
JUN 1 JUL 12		-7.77	7.14	1001.9		-7.77	6.60	1003.8		-7.77	6.14	1001.6		-7.77	5.74	995.4		-7.77	5.74	995.4		-7.77	5.40	985.4	
MAY 18 JUL 27		-7.53	6.94	963.4		-7.53	6.43	971.5		-7.53	5.99	975.1		-7.53	5.62	974.2		-7.53	5.62	974.2		-7.53	5.30	969.2	
MAY 3 AUG 10		-7.20	6.66	907.6		-7.20	6.20	923.8		-7.20	5.80	935.0		-7.20	5.45	941.2		-7.20	5.45	941.2		-7.20	5.16	942.7	
APR 19 AUG 25		-6.82	6.34	836.0		-6.82	5.92	861.1		-6.82	5.56	880.9		-6.82	5.25	895.1		-6.82	5.25	895.1		-6.82	4.99	904.0	
APR 4 SEP 9		-6.42	5.99	752.4		-6.42	5.62	786.4		-6.42	5.31	814.8		-6.42	5.04	837.0		-6.42	5.04	837.0		-6.42	4.81	853.5	
MAR 21 SEP 23		-6.00	5.63	660.2		-6.00	5.31	702.1		-6.00	5.04	738.0		-6.00	4.81	767.6		-6.00	4.81	767.6		-6.00	4.61	791.0	
MAR 7 OCT 8		-5.58	5.26	566.1		-5.58	5.00	614.2		-5.58	4.78	656.3		-5.58	4.59	691.8		-5.58	4.59	691.8		-5.58	4.42	721.0	
FEB 20 OCT 22		-5.18	4.92	476.9		-5.18	4.70	525.1		-5.18	4.52	575.4		-5.18	4.37	615.3		-5.18	4.37	615.3		-5.18	4.24	648.6	
FEB 7 NOV 5		-4.80	4.59	398.1		-4.80	4.42	452.4		-4.80	4.29	501.1		-4.80	4.17	543.5		-4.80	4.17	543.5		-4.80	4.07	579.6	
JAN 23 NOV 19		-4.47	4.32	335.5		-4.47	4.19	390.5		-4.47	4.09	440.0		-4.47	4.00	483.6		-4.47	4.00	483.6		-4.47	3.93	521.1	
JAN 10 DEC 3		-4.23	4.11	292.3		-4.23	4.02	347.0		-4.23	3.94	396.6		-4.23	3.88	440.4		-4.23	3.88	440.4		-4.23	3.83	478.4	
DEC 22		-4.08	3.98	267.4		-4.08	3.91	321.7		-4.08	3.85	371.0		-4.08	3.80	414.8		-4.08	3.80	414.8		-4.08	3.76	452.8	
		YEAR	R.I.			YEAR	R.I.			YEAR	R.I.			YEAR	R.I.			YEAR	R.I.			YEAR	R.I.		
		240.567	4.577			252.899	4.812			263.349	5.010			271.780	5.171			278.235	5.294			288.731	5.493		
		60 PCT	70 PCT	80 PCT	90 PCT	100 PCT																			
		THETA	ALPHA	LY	SS	THETA	ALPHA	LY	SS	THETA	ALPHA	LY	SS	THETA	ALPHA	LY	SS	THETA	ALPHA	LY	SS	THETA	ALPHA	LY	SS
		23.2	23.3			19.7	25.5			16.5	27.4			13.6	29.1			11.0	30.6						
		SR	SS	LY	SS	SR	SS	LY	SS	SR	SS	LY	SS	SR	SS	LY	SS	SR	SS	LY	SS	SR	SS	LY	SS
JUN 22		-7.93	5.16	978.5		-7.93	4.90	961.2		-7.93	4.66	942.8		-7.93	4.46	924.1		-7.93	4.28	905.2		-7.93	4.28	905.2	
JUN 1 JUL 12		-7.77	5.11	972.6		-7.77	4.85	951.7		-7.77	4.63	941.4		-7.77	4.43	928.5		-7.77	4.26	907.3		-7.77	4.26	907.3	
MAY 18 JUL 27		-7.53	5.02	960.8		-7.53	4.78	949.7		-7.53	4.57	937.0		-7.53	4.38	923.1		-7.53	4.22	908.6		-7.53	4.22	908.6	
MAY 3 AUG 10		-7.20	4.90	940.1		-7.20	4.68	934.4		-7.20	4.49	926.3		-7.20	4.32	916.7		-7.20	4.17	905.9		-7.20	4.17	905.9	
APR 19 AUG 25		-6.82	4.76	908.3		-6.82	4.56	908.7		-6.82	4.39	906.1		-6.82	4.24	901.2		-6.82	4.10	894.8		-6.82	4.10	894.8	
APR 4 SEP 9		-6.42	4.61	864.6		-6.42	4.43	871.3		-6.42	4.28	874.3		-6.42	4.15	874.6		-6.42	4.03	872.7		-6.42	4.03	872.7	
MAR 21 SEP 23		-6.00	4.45	808.6		-6.00	4.30	821.2		-6.00	4.17	829.7		-6.00	4.06	834.9		-6.00	3.96	837.5		-6.00	3.96	837.5	
MAR 7 OCT 8		-5.58	4.28	744.0		-5.58	4.16	761.8		-5.58	4.06	775.0		-5.58	3.97	784.5		-5.58	3.89	791.1		-5.58	3.89	791.1	
FEB 20 OCT 22		-5.18	4.13	675.8		-5.18	4.03	697.6		-5.18	3.95	714.5		-5.18	3.88	727.6		-5.18	3.82	737.4		-5.18	3.82	737.4	
FEB 7 NOV 5		-4.80	3.99	609.5		-4.80	3.92	634.0		-4.80	3.85	653.6		-4.80	3.80	669.2		-4.80	3.75	681.5		-4.80	3.75	681.5	
JAN 23 NOV 19		-4.47	3.87	552.5		-4.47	3.82	578.6		-4.47	3.77	599.9		-4.47	3.73	617.1		-4.47	3.70	631.0		-4.47	3.70	631.0	
JAN 10 DEC 3		-4.23	3.78	510.5		-4.23	3.74	537.4		-4.23	3.71	559.5		-4.23	3.68	577.6		-4.23	3.66	592.4		-4.23	3.66	592.4	
DEC 22		-4.08	3.73	485.2		-4.08	3.70	512.3		-4.08	3.68	534.8		-4.08	3.65	553.3		-4.08	3.64	568.6		-4.08	3.64	568.6	
		YEAR	R.I.			YEAR	R.I.			YEAR	R.I.			YEAR	R.I.			YEAR	R.I.			YEAR	R.I.		
		282.886	5.382			285.994	5.441			287.831	5.476			288.664	5.492			288.731	5.493						

NOTE - FOR ASPECTS WITH WEST COMPONENTS, THE TIME AND SIGN OF SR AND SS ARE REVERSED.

LATITUDE 48 N
ASPECT ENE - WNW

	10 PCT						20 PCT						SLOPE						30 PCT						40 PCT						50 PCT					
	THETA			ALPHA			THETA			ALPHA			THETA			ALPHA			THETA			ALPHA			THETA			ALPHA			THETA			ALPHA		
	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY
JUN 22	-7.95	7.53	1017.2	-7.93	7.06	1005.0	-7.93	6.54	987.8	-7.93	6.07	975.8	-7.93	5.59	967.4	-7.93	5.12	958.0	-7.93	4.65	948.6	-7.93	4.18	939.2	-7.93	3.71	929.8	-7.93	3.24	920.4	-7.93	2.77	911.0	-7.93	2.30	901.6
JUN 1 JUL 12	-7.77	7.36	985.3	-7.77	6.88	973.8	-7.77	6.41	962.4	-7.77	5.94	951.0	-7.77	5.47	939.6	-7.77	5.00	928.2	-7.77	4.53	916.8	-7.77	4.06	905.4	-7.77	3.59	894.0	-7.77	3.12	882.6	-7.77	2.65	871.2	-7.77	2.18	859.8
MAY 18 JUL 27	-7.53	7.09	941.4	-7.53	6.60	929.8	-7.53	6.13	918.4	-7.53	5.66	907.0	-7.53	5.19	895.6	-7.53	4.72	884.2	-7.53	4.25	872.8	-7.53	3.78	861.4	-7.53	3.31	850.0	-7.53	2.84	838.6	-7.53	2.37	827.2	-7.53	1.90	815.8
MAY 3 AUG 10	-7.20	6.74	873.3	-7.20	6.23	855.1	-7.20	5.72	843.7	-7.20	5.21	832.3	-7.20	4.70	820.9	-7.20	4.19	809.5	-7.20	3.68	798.1	-7.20	3.17	786.7	-7.20	2.66	775.3	-7.20	2.15	763.9	-7.20	1.64	752.5	-7.20	1.13	741.1
APR 19 AUG 25	-6.82	6.34	788.0	-6.82	5.80	767.2	-6.82	5.25	745.7	-6.82	4.70	724.2	-6.82	4.15	702.7	-6.82	3.60	681.3	-6.82	3.05	659.8	-6.82	2.50	638.3	-6.82	1.95	616.8	-6.82	1.40	595.3	-6.82	0.85	573.8	-6.82	0.30	552.3
APR 4 SEP 9	-6.42	5.90	691.3	-6.42	5.35	668.2	-6.42	4.79	645.9	-6.42	4.24	623.6	-6.42	3.69	602.1	-6.42	3.14	580.6	-6.42	2.59	559.1	-6.42	2.04	537.6	-6.42	1.49	516.1	-6.42	0.94	494.6	-6.42	0.39	473.1	-6.42	-0.16	451.6
MAR 21 SEP 23	-6.00	5.45	587.7	-6.00	4.88	562.8	-6.00	4.31	540.3	-6.00	3.74	517.8	-6.00	3.17	495.3	-6.00	2.60	472.8	-6.00	2.03	450.3	-6.00	1.46	427.8	-6.00	0.89	405.3	-6.00	0.32	382.8	-6.00	-0.25	360.3	-6.00	-0.70	337.8
MAR 7 OCT 8	-5.58	5.00	484.9	-5.58	4.41	459.2	-5.58	3.83	437.1	-5.58	3.25	414.6	-5.58	2.67	392.1	-5.58	2.09	369.6	-5.58	1.51	347.1	-5.58	0.93	324.6	-5.58	0.35	302.1	-5.58	-0.23	279.6	-5.58	-0.70	257.1	-5.58	-1.17	234.6
FEB 20 OCT 22	-5.18	4.57	390.4	-5.18	3.96	365.6	-5.18	3.36	343.5	-5.18	2.76	321.4	-5.18	2.16	299.3	-5.18	1.56	277.2	-5.18	0.96	255.1	-5.18	0.36	233.0	-5.18	-0.22	210.5	-5.18	-0.70	188.0	-5.18	-1.17	165.5	-5.18	-1.64	143.0
FEB 7 NOV 5	-4.80	4.16	300.2	-4.80	3.53	284.2	-4.80	2.93	264.4	-4.80	2.33	244.6	-4.80	1.73	224.8	-4.80	1.13	204.9	-4.80	0.53	185.1	-4.80	-0.07	165.3	-4.80	-0.67	145.5	-4.80	-1.27	125.7	-4.80	-1.87	106.1	-4.80	-2.47	86.5
JAN 23 NOV 19	-4.47	3.81	246.7	-4.47	3.16	222.7	-4.47	2.54	204.4	-4.47	1.94	186.1	-4.47	1.34	167.8	-4.47	0.74	149.5	-4.47	0.14	131.2	-4.47	-0.46	112.8	-4.47	-1.06	94.4	-4.47	-1.66	76.0	-4.47	-2.26	57.6	-4.47	-2.86	39.2
JAN 10 DEC 3	-4.23	3.54	204.5	-4.23	2.88	181.6	-4.23	2.25	164.6	-4.23	1.65	147.3	-4.23	1.05	129.0	-4.23	0.45	110.7	-4.23	-0.15	92.3	-4.23	-0.75	73.9	-4.23	-1.35	55.5	-4.23	-1.95	37.1	-4.23	-2.55	18.7	-4.23	-3.15	0.3
DEC 22	-4.08	3.38	180.8	-4.08	2.70	158.6	-4.08	2.07	142.5	-4.08	1.47	126.2	-4.08	0.87	109.9	-4.08	0.27	93.6	-4.08	-0.33	75.2	-4.08	-0.93	56.8	-4.08	-1.53	38.4	-4.08	-2.13	20.0	-4.08	-2.73	1.6	-4.08	-3.33	-18.4
JUN 22	-7.93	4.90	924.3	-7.93	4.41	903.6	-7.93	3.96	884.2	-7.93	3.51	865.1	-7.93	3.06	846.0	-7.93	2.61	826.9	-7.93	2.16	807.8	-7.93	1.71	788.7	-7.93	1.26	769.6	-7.93	0.81	750.5	-7.93	0.36	731.4	-7.93	-0.09	712.3
JUN 1 JUL 12	-7.77	4.73	894.7	-7.77	4.25	874.5	-7.77	3.81	855.7	-7.77	3.36	836.8	-7.77	2.91	817.9	-7.77	2.46	799.0	-7.77	2.01	780.1	-7.77	1.56	761.2	-7.77	1.11	742.3	-7.77	0.66	723.4	-7.77	0.21	704.5	-7.77	-0.24	685.6
MAY 18 JUL 27	-7.53	4.46	844.3	-7.53	3.99	825.1	-7.53	3.57	807.3	-7.53	3.15	789.4	-7.53	2.73	771.5	-7.53	2.31	753.6	-7.53	1.89	735.7	-7.53	1.47	717.8	-7.53	1.05	699.9	-7.53	0.63	682.0	-7.53	0.21	664.1	-7.53	-0.21	646.2
MAY 3 AUG 10	-7.20	4.10	773.7	-7.20	3.65	755.8	-7.20	3.25	739.4	-7.20	2.85	723.0	-7.20	2.45	706.6	-7.20	2.05	690.2	-7.20	1.65	673.8	-7.20	1.25	657.4	-7.20	0.85	641.0	-7.20	0.45	624.6	-7.20	0.05	608.2	-7.20	-0.35	591.8
APR 19 AUG 25	-6.82	3.69	686.9	-6.82	3.26	670.6	-6.82	2.87	656.1	-6.82	2.47	641.3	-6.82	2.07	626.5	-6.82	1.67	611.7	-6.82	1.27	596.9	-6.82	0.87	582.1	-6.82	0.47	567.3	-6.82	0.07	552.5	-6.82	-0.33	537.7	-6.82	-0.93	522.9
APR 4 SEP 9	-6.42	3.25	590.3	-6.42	2.84	576.0	-6.42	2.47	563.4	-6.42	2.07	550.9	-6.42	1.67	538.4	-6.42	1.27	525.9	-6.42	0.87	513.4	-6.42	0.47	500.9	-6.42	0.07	488.4	-6.42	-0.33	475.9	-6.42	-0.93	463.4	-6.42	-1.53	450.9
MAR 21 SEP 23	-6.00	2.80	489.1	-6.00	2.40	476.9	-6.00	2.06	466.4	-6.00	1.71	456.9	-6.00	1.36	447.4	-6.00	1.01	437.9	-6.00	0.66	428.4	-6.00	0.31	418.9	-6.00	-0.04	409.4	-6.00	-0.60	399.9	-6.00	-1.20	390.4	-6.00	-1.80	380.9
MAR 7 OCT 8	-5.58	2.34	391.1	-5.58	1.96	381.0	-5.58	1.64	372.6	-5.58	1.32	364.1	-5.58	1.00	355.6	-5.58	0.68	347.1	-5.58	0.36	338.6	-5.58	0.04	330.1	-5.58	-0.28	321.6	-5.58	-0.88	312.1	-5.58	-1.48	302.6	-5.58	-2.08	293.1
MAR 20 OCT 22	-5.18	1.90	303.1	-5.18	1.54	294.9	-5.18	1.24	288.5	-5.18	0.94	282.1	-5.18	0.64	275.7	-5.18	0.34	269.3	-5.18	0.04	262.9	-5.18	-0.26	256.5	-5.18	-0.86	248.0	-5.18	-1.46	239.1	-5.18	-2.06	230.6	-5.18	-2.66	221.1
FEB 7 NOV 5	-4.80	1.49	229.5	-4.80	1.15	223.1	-4.80	0.86	218.0	-4.80	0.56	212.5	-4.80	0.26	207.0	-4.80	-0.04	201.5	-4.80	-0.64	195.0	-4.80	-1.24	188.5	-4.80	-1.84	182.0	-4.80	-2.44	175.5	-4.80	-3.04	169.0	-4.80	-3.64	162.5
JAN 23 NOV 19	-4.47	1.13	174.3	-4.47	0.81	169.2	-4.47	0.54	165.4	-4.47	0.24	161.6	-4.47	-0.06	157.8	-4.47	-0.66	153.9	-4.47	-1.26	149.0	-4.47	-1.86	144.1	-4.47	-2.46	139.2	-4.47	-3.06	134.3	-4.47	-3.66	129.4	-4.47	-4.26	124.5
JAN 10 DEC 3	-4.23	0.86	138.1	-4.23	0.55	133.9	-4.23	0.30	130.9	-4.23	0.00	127.9	-4.23	-0.30	124.9	-4.23	-0.90	121.0	-4.23	-1.50	117.1	-4.23	-2.10	113.2	-4.23	-2.70	109.3	-4.23	-3.30	105.4	-4.23	-3.90	101.5	-4.23	-4.50	97.6
DEC 22	-4.08	0.70	118.2	-4.08	0.39	114.5	-4.08	0.15	111.9	-4.08	-0.15	109.9	-4.08	-0.75	106.0	-4.08	-1.35	102.1	-4.08	-1.95	98.2	-4.08	-2.55	94.3	-4.08	-3.15	90.4	-4.08	-3.75	86.5	-4.08	-4.35	82.6	-4.08	-4.95	78.7

NOTE - FOR ASPECTS WITH WEST COMPONENTS, THE TIME AND SIGN OF SR AND SS ARE REVERSED.

LATITUDE 48 N
ASPECT ESE - WSW

	10 PCT				20 PCT				SLOPE				30 PCT				40 PCT				50 PCT																							
	THETA	ALPHA	SR	SS	THETA	ALPHA	SR	SS	THETA	ALPHA	SR	SS	THETA	ALPHA	SR	SS	THETA	ALPHA	SR	SS	THETA	ALPHA	SR	SS	LY																			
JUN 22	45.6	7.6	-7.93	7.25	1022.7	-7.93	6.63	1020.4	-7.77	6.06	1015.5	-7.77	5.96	996.2	-7.77	5.47	990.8	-7.77	5.05	983.0	-7.77	5.05	983.0	-7.77	5.05	983.0																		
JUN 1 JUL 12			-7.77	7.12	999.0	-7.77	6.51	998.9	-7.77	5.96	996.2	-7.77	5.47	990.8	-7.77	5.05	983.0	-7.77	5.05	983.0	-7.77	5.05	983.0	-7.77	5.05	983.0																		
JUN 18 JUL 27			-7.53	6.89	957.8	-7.53	6.31	961.5	-7.53	5.78	962.4	-7.53	5.32	960.5	-7.53	4.91	956.0	-7.53	4.91	956.0	-7.53	4.91	956.0	-7.53	4.91	956.0																		
MAY 3 AUG 10			-7.20	6.60	908.3	-7.20	6.04	908.9	-7.20	5.55	912.7	-7.20	5.11	915.4	-7.20	4.73	915.1	-7.20	4.73	915.1	-7.20	4.73	915.1	-7.20	4.73	915.1																		
MAY 3 AUG 25			-6.82	6.25	822.6	-6.82	5.73	830.6	-6.82	5.27	847.8	-6.82	4.86	855.6	-6.82	4.51	860.2	-6.82	4.51	860.2	-6.82	4.51	860.2	-6.82	4.51	860.2																		
APR 4 SEP 9			-6.42	5.88	735.1	-6.42	5.40	754.4	-6.42	4.97	770.8	-6.42	4.59	783.8	-6.42	4.27	793.2	-6.42	4.27	793.2	-6.42	4.27	793.2	-6.42	4.27	793.2																		
MAR 21 SEP 23			-6.00	5.50	639.4	-6.00	5.05	663.3	-6.00	4.66	684.4	-6.00	4.32	701.9	-6.00	4.02	715.7	-6.00	4.02	715.7	-6.00	4.02	715.7	-6.00	4.02	715.7																		
MAR 7 OCT 8			-5.58	5.11	542.6	-5.58	4.70	570.1	-5.58	4.34	594.8	-5.58	4.04	615.9	-5.58	3.77	633.2	-5.58	3.77	633.2	-5.58	3.77	633.2	-5.58	3.77	633.2																		
FEB 20 OCT 22			-5.18	4.74	451.6	-5.18	4.36	481.5	-5.18	4.04	508.6	-5.18	3.77	532.1	-5.18	3.54	551.9	-5.18	3.54	551.9	-5.18	3.54	551.9	-5.18	3.54	551.9																		
FEB 7 NOV 5			-4.80	4.40	371.9	-4.80	4.05	402.9	-4.80	3.76	431.2	-4.80	3.53	458.9	-4.80	3.32	477.2	-4.80	3.32	477.2	-4.80	3.32	477.2	-4.80	3.32	477.2																		
JAN 23 NOV 19			-4.47	4.10	309.1	-4.47	3.79	340.3	-4.47	3.53	368.9	-4.47	3.31	394.2	-4.47	3.13	415.9	-4.47	3.13	415.9	-4.47	3.13	415.9	-4.47	3.13	415.9																		
JAN 10 DEC 3			-4.23	3.88	266.0	-4.23	3.59	296.9	-4.23	3.35	325.4	-4.23	3.16	350.6	-4.23	3.00	372.8	-4.23	3.00	372.8	-4.23	3.00	372.8	-4.23	3.00	372.8																		
DEC 22			-4.08	3.74	241.4	-4.08	3.47	272.0	-4.08	3.25	300.1	-4.08	3.06	325.1	-4.08	2.91	346.8	-4.08	2.91	346.8	-4.08	2.91	346.8	-4.08	2.91	346.8																		
60 PCT					70 PCT					SLOPE					80 PCT					90 PCT					100 PCT																			
THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY															
30.4	33.4	-7.93	4.76	986.5	-7.93	4.43	973.4	-7.93	4.14	959.5	-7.93	3.89	945.2	-7.93	3.67	930.8	-7.93	3.67	930.8	-7.93	3.67	930.8	-7.93	3.67	930.8	-7.93	3.67	930.8	-7.93	3.67	930.8													
		-7.77	4.68	973.2	-7.77	4.36	961.7	-7.77	4.08	949.3	-7.77	3.84	936.3	-7.77	3.63	923.1	-7.77	3.63	923.1	-7.77	3.63	923.1	-7.77	3.63	923.1	-7.77	3.63	923.1	-7.77	3.63	923.1													
		-7.53	4.56	949.1	-7.53	4.26	940.4	-7.53	3.99	930.4	-7.53	3.76	915.5	-7.53	3.55	908.2	-7.53	3.55	908.2	-7.53	3.55	908.2	-7.53	3.55	908.2	-7.53	3.55	908.2	-7.53	3.55	908.2													
		-7.20	4.40	912.2	-7.20	4.11	907.1	-7.20	3.86	900.3	-7.20	3.64	892.4	-7.20	3.45	883.7	-7.20	3.45	883.7	-7.20	3.45	883.7	-7.20	3.45	883.7	-7.20	3.45	883.7	-7.20	3.45	883.7													
		-6.82	4.20	861.8	-6.82	3.94	860.8	-6.82	3.71	857.7	-6.82	3.51	853.1	-6.82	3.33	847.4	-6.82	3.33	847.4	-6.82	3.33	847.4	-6.82	3.33	847.4	-6.82	3.33	847.4	-6.82	3.33	847.4													
		-6.42	3.99	799.3	-6.42	3.75	792.8	-6.42	3.54	803.2	-6.42	3.36	802.0	-6.42	3.20	799.4	-6.42	3.20	799.4	-6.42	3.20	799.4	-6.42	3.20	799.4	-6.42	3.20	799.4	-6.42	3.20	799.4													
		-6.00	3.77	725.9	-6.00	3.55	732.8	-6.00	3.37	737.1	-6.00	3.20	739.2	-6.00	3.06	739.7	-6.00	3.06	739.7	-6.00	3.06	739.7	-6.00	3.06	739.7	-6.00	3.06	739.7	-6.00	3.06	739.7													
MAR 21 SEP 23			-5.58	3.55	646.8	-5.58	3.36	657.0	-5.58	3.19	664.3	-5.58	3.05	669.2	-5.58	2.92	672.2	-5.58	2.92	672.2	-5.58	2.92	672.2	-5.58	2.92	672.2	-5.58	2.92	672.2	-5.58	2.92	672.2												
MAR 7 OCT 8			-5.18	3.34	567.9	-5.18	3.17	580.4	-5.18	3.02	590.0	-5.18	2.90	597.1	-5.18	2.79	602.2	-5.18	2.79	602.2	-5.18	2.79	602.2	-5.18	2.79	602.2	-5.18	2.79	602.2	-5.18	2.79	602.2												
FEB 20 OCT 22			-4.80	3.14	494.7	-4.80	3.00	508.8	-4.80	2.87	519.5	-4.80	2.76	528.4	-4.80	2.67	535.0	-4.80	2.67	535.0	-4.80	2.67	535.0	-4.80	2.67	535.0	-4.80	2.67	535.0	-4.80	2.67	535.0												
FEB 7 NOV 5			-4.47	2.98	434.1	-4.47	2.85	449.0	-4.47	2.74	460.5	-4.47	2.65	470.4	-4.47	2.57	477.8	-4.47	2.57	477.8	-4.47	2.57	477.8	-4.47	2.57	477.8	-4.47	2.57	477.8	-4.47	2.57	477.8												
JAN 23 NOV 19			-4.23	2.86	390.7	-4.23	2.75	405.9	-4.23	2.65	418.2	-4.23	2.57	428.1	-4.23	2.49	436.0	-4.23	2.49	436.0	-4.23	2.49	436.0	-4.23	2.49	436.0	-4.23	2.49	436.0	-4.23	2.49	436.0												
JAN 10 DEC 3			-4.08	2.79	365.2	-4.08	2.68	380.4	-4.08	2.59	392.8	-4.08	2.52	402.9	-4.08	2.45	411.0	-4.08	2.45	411.0	-4.08	2.45	411.0	-4.08	2.45	411.0	-4.08	2.45	411.0	-4.08	2.45	411.0												
DEC 22			-4.08	2.79	365.2	-4.08	2.68	380.4	-4.08	2.59	392.8	-4.08	2.52	402.9	-4.08	2.45	411.0	-4.08	2.45	411.0	-4.08	2.45	411.0	-4.08	2.45	411.0	-4.08	2.45	411.0	-4.08	2.45	411.0												
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257.817					259.235					259.831					259.778					259.433					259.228					259.432					259.432									
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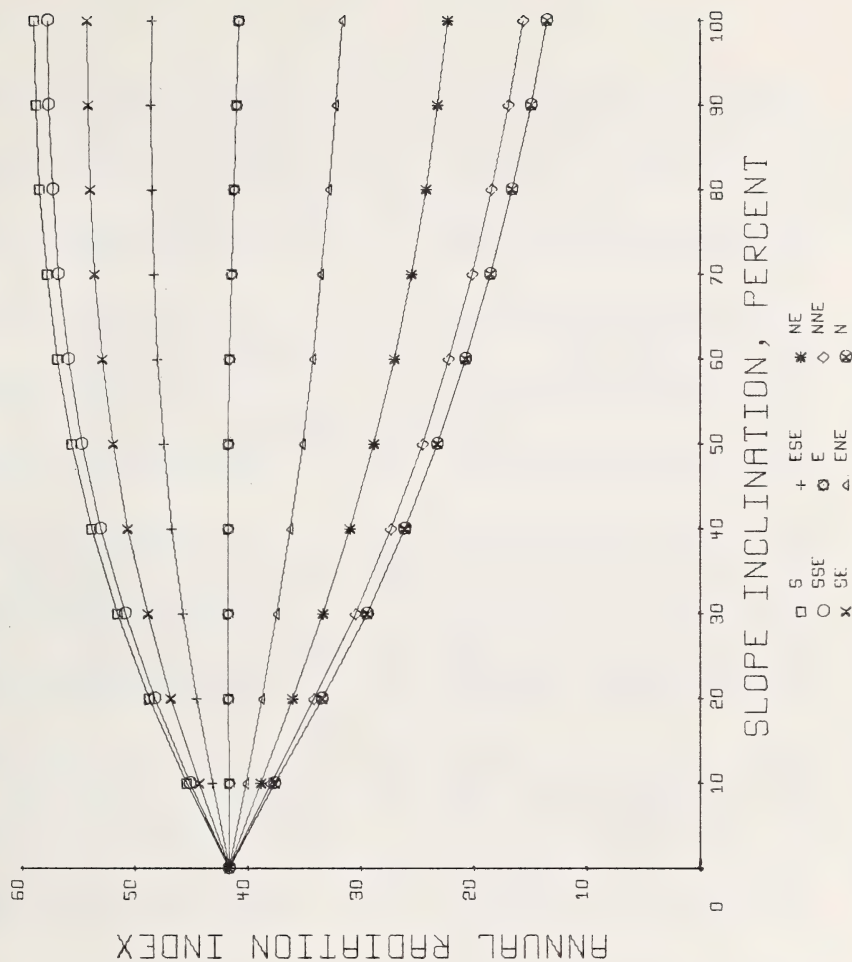
NOTE - FOR ASPECTS WITH WEST COMPONENTS, THE TIME AND SIGN OF SR AND SS ARE REVERSED.

LATITUDE 48 N
ASPECT E - W

		10 PCT				20 PCT				SLOPE				30 PCT				40 PCT				50 PCT			
		THETA	ALPHA	LY	SS	THETA	ALPHA	LY	SS	THETA	ALPHA	LY	SS	THETA	ALPHA	LY	SS	THETA	ALPHA	LY	SS	THETA	ALPHA	LY	SS
JUN 22		-7.93	7.33	1020.2		-7.93	6.73	1014.0		-7.93	6.13	1005.0		-7.93	5.57	993.9		-7.93	5.07	981.5		-7.93	4.57	970.5	
JUN 1	JUL 12	-7.77	7.19	994.4		-7.77	6.58	988.8		-7.77	6.00	980.6		-7.77	5.45	970.5		-7.77	4.95	959.1		-7.77	4.45	947.6	
FEB 20	OCT 22	-7.53	6.94	949.9		-7.53	6.35	945.2		-7.53	5.78	938.4		-7.53	5.24	929.9		-7.53	4.76	920.2		-7.53	4.26	910.4	
MAY 18	JUL 27	-7.20	6.82	886.2		-7.20	6.04	882.8		-7.20	5.48	877.7		-7.20	4.97	871.4		-7.20	4.47	863.9		-7.20	3.97	856.4	
MAY 3	AUG 10	-6.82	6.82	805.8		-6.82	5.68	803.8		-6.82	5.14	800.8		-6.82	4.65	796.9		-6.82	4.21	792.0		-6.82	3.71	787.1	
APR 19	AUG 25	-6.42	5.85	713.7		-6.42	5.29	713.2		-6.42	4.77	712.3		-6.42	4.30	710.8		-6.42	3.88	708.6		-6.42	3.38	706.4	
APR 4	SEP 9	-6.00	5.43	614.0		-6.00	4.89	614.9		-6.00	4.39	616.0		-6.00	3.94	616.8		-6.00	3.55	617.0		-6.00	3.15	617.0	
MAR 21	SEP 23	-5.58	5.02	514.2		-5.58	4.49	516.3		-5.58	4.01	519.0		-5.58	3.58	521.8		-5.58	3.21	524.1		-5.58	2.81	526.4	
MAR 7	OCT 8	-5.18	4.62	421.4		-5.18	4.10	424.4		-5.18	3.64	428.3		-5.18	3.24	432.6		-5.18	2.89	436.4		-5.18	2.59	440.2	
FEB 7	NOV 5	-4.80	4.24	340.9		-4.80	3.74	344.4		-4.80	3.30	349.3		-4.80	2.91	354.4		-4.80	2.59	359.3		-4.80	2.34	364.4	
JAN 23	NOV 19	-4.47	3.92	278.1		-4.47	3.43	282.0		-4.47	3.00	287.3		-4.47	2.64	293.0		-4.47	2.34	298.4		-4.47	2.15	304.4	
JAN 10	DEC 3	-4.23	3.68	235.4		-4.23	3.20	239.5		-4.23	2.78	245.0		-4.23	2.43	250.8		-4.23	2.15	256.5		-4.23	1.91	262.4	
DEC 22		-4.08	3.53	211.2		-4.08	3.05	215.5		-4.08	2.65	220.8		-4.08	2.31	226.7		-4.08	2.03	232.4		-4.08	1.79	238.4	
		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.	YEAR	R.I.		YEAR	R.I.		YEAR	R.I.	YEAR	R.I.		YEAR	R.I.		YEAR	R.I.
		226.741	4314		226.695	4313		226.538	4310	226.485	4303		226.315	4296		226.185	4289	225.582	4292		225.452	4285		225.322	4278
		60 PCT	70 PCT	80 PCT	90 PCT	100 PCT																			
		THETA	ALPHA	LY	SS	THETA	ALPHA	LY	SS	THETA	ALPHA	LY	SS	THETA	ALPHA	LY	SS	THETA	ALPHA	LY	SS	THETA	ALPHA	LY	SS
JUN 22		-7.93	4.61	968.3		-7.93	4.21	954.7		-7.93	3.86	940.9		-7.93	3.56	927.4		-7.93	3.29	914.1		-7.93	3.09	900.8	
JUN 1	JUL 12	-7.77	4.51	946.9		-7.77	4.12	934.3		-7.77	3.77	921.4		-7.77	3.48	908.8		-7.77	3.21	896.2		-7.77	2.91	882.8	
MAY 18	JUL 27	-7.53	4.33	909.7		-7.53	3.95	898.7		-7.53	3.63	887.4		-7.53	3.34	876.1		-7.53	3.09	864.9		-7.53	2.81	853.4	
MAY 3	AUG 10	-7.20	4.10	855.7		-7.20	3.74	846.9		-7.20	3.42	837.6		-7.20	3.15	828.3		-7.20	2.91	818.8		-7.20	2.64	809.4	
APR 19	AUG 25	-6.82	3.82	786.4		-6.82	3.48	780.1		-6.82	3.19	773.2		-6.82	2.93	766.0		-6.82	2.71	758.6		-6.82	2.45	751.2	
APR 4	SEP 9	-6.42	3.52	705.6		-6.42	3.20	701.9		-6.42	2.93	697.4		-6.42	2.69	692.6		-6.42	2.47	687.3		-6.42	2.21	682.0	
MAR 21	SEP 23	-6.00	3.21	616.5		-6.00	2.91	615.1		-6.00	2.66	613.0		-6.00	2.44	610.3		-6.00	2.25	607.1		-6.00	2.02	603.8	
MAR 7	OCT 8	-5.58	2.90	525.6		-5.58	2.62	526.3		-5.58	2.39	526.2		-5.58	2.19	525.4		-5.58	2.02	524.0		-5.58	1.80	522.6	
FEB 20	OCT 22	-5.18	2.60	439.5		-5.18	2.35	441.8		-5.18	2.13	443.2		-5.18	1.95	443.9		-5.18	1.80	443.9		-5.18	1.60	442.0	
FEB 7	NOV 5	-4.80	2.32	363.5		-4.80	2.09	366.8		-4.80	1.90	369.3		-4.80	1.73	371.0		-4.80	1.59	372.0		-4.80	1.42	373.1	
JAN 23	NOV 19	-4.47	2.08	303.1		-4.47	1.87	307.1		-4.47	1.70	310.2		-4.47	1.55	312.5		-4.47	1.42	314.1		-4.47	1.29	316.7	
JAN 10	DEC 3	-4.23	1.91	261.5		-4.23	1.71	265.7		-4.23	1.55	269.4		-4.23	1.41	271.7		-4.23	1.29	273.7		-4.23	1.15	276.7	
DEC 22		-4.08	1.80	237.5		-4.08	1.61	241.8		-4.08	1.46	245.4		-4.08	1.33	248.1		-4.08	1.21	250.3		-4.08	1.08	253.4	
		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.	YEAR	R.I.		YEAR	R.I.		YEAR	R.I.	YEAR	R.I.		YEAR	R.I.		YEAR	R.I.
		224.704	4275		223.569	4254		222.217	4228	220.700	4199		219.185	4170		217.668	4141	216.151	4112		214.634	4083		213.117	4054

NOTE - FOR ASPECTS WITH WEST COMPONENTS, THE TIME AND SIGN OF SR AND SS ARE REVERSED.

RADIATION INDEXES FOR VARIOUS FACETS AT LATITUDE 50 N



HORIZONTAL SURFACE

LATITUDE 50 N

	SR	SS	LY
JUN 22	-8.08	8.08	1020.9
JUN 1 JUL 12	-7.92	7.92	992.9
MAY 18 JUL 27	-7.65	7.65	944.8
MAY 3 AUG 10	-7.29	7.29	876.4
APR 19 AUG 25	-6.89	6.89	790.8
APR 4 SEP 9	-6.45	6.45	693.6
MAR 21 SEP 23	-6.00	6.00	589.5
MAR 7 OCT 8	-5.55	5.55	486.3
FEB 20 OCT 22	-5.11	5.11	391.3
FEB 7 NOV 5	-4.71	4.71	309.8
JAN 23 NOV 19	-4.35	4.35	246.9
JAN 10 DEC 3	-4.08	4.08	204.6
DEC 22	-3.92	3.92	180.7

YEAR R.I.
219.589 .4178

LATITUDE 50 N
ASPECT N -

	SLOPE										50 PCT									
	10 PCT					20 PCT					30 PCT					40 PCT				
	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY
JUN 22	-8.08	8.08	1010.7	-8.08	8.08	990.9	0.0	-8.08	8.08	962.9	-8.08	8.08	928.6	-8.08	8.08	889.9	76.6	0.0	8.08	889.9
JUN 1 JUL 12	-7.92	7.92	976.9	-7.92	7.92	951.8	0.0	-7.92	7.92	919.2	-7.92	7.92	880.8	-7.92	7.92	850.8	76.6	0.0	7.92	850.8
MAY 18 JUL 27	-7.65	7.65	919.6	-7.65	7.65	885.1	0.0	-7.65	7.65	845.8	-7.65	7.65	800.8	-7.65	7.65	773.0	76.6	0.0	7.65	773.0
MAY 3 AUG 10	-7.29	7.29	839.3	-7.29	7.29	794.9	0.0	-7.29	7.29	745.0	-7.29	7.29	691.7	-7.29	7.29	637.0	76.6	0.0	7.29	637.0
APR 19 AUG 25	-6.89	6.89	740.7	-6.89	6.89	684.6	0.0	-6.89	6.89	624.4	-6.89	6.89	562.3	-6.89	6.89	500.3	76.6	0.0	6.89	500.3
APR 4 SEP 9	-6.45	6.45	631.2	-6.45	6.45	564.0	0.0	-6.45	6.45	494.3	-6.45	6.45	424.2	-6.45	6.45	355.7	76.6	0.0	6.45	355.7
MAR 21 SEP 23	-6.00	6.00	516.6	-6.00	6.00	440.2	0.0	-6.00	6.00	362.8	-6.00	6.00	286.4	-6.00	6.00	213.1	76.6	0.0	6.00	213.1
MAR 7 OCT 8	-5.45	5.45	405.9	-5.45	5.45	323.8	0.0	-5.45	5.45	242.6	-5.45	5.45	165.0	-5.45	5.45	93.6	76.6	0.0	5.45	93.6
FEB 20 OCT 22	-4.90	4.90	307.0	-4.90	4.90	223.5	0.0	-4.90	4.90	144.2	-4.90	4.90	71.8	-4.90	4.90	0.0	76.6	0.0	4.90	0.0
FEB 7 NOV 5	-4.39	4.39	225.0	-4.39	4.39	144.0	0.0	-4.39	4.39	71.8	-4.39	4.39	0.0	-4.39	4.39	0.0	76.6	0.0	4.39	0.0
JAN 23 NOV 19	-3.94	3.94	163.9	-3.94	3.94	88.1	0.0	-3.94	3.94	26.7	-3.94	3.94	0.0	-3.94	3.94	0.0	76.6	0.0	3.94	0.0
JAN 10 DEC 3	-3.58	3.58	124.2	-3.58	3.58	54.2	0.0	-3.58	3.58	5.2	-3.58	3.58	0.0	-3.58	3.58	0.0	76.6	0.0	3.58	0.0
DEC 22	-3.36	3.36	102.5	-3.36	3.36	37.0	0.0	-3.36	3.36	0.0	-3.36	3.36	0.0	-3.36	3.36	0.0	76.6	0.0	3.36	0.0

	SLOPE										100 PCT									
	60 PCT					70 PCT					80 PCT					90 PCT				
	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY
JUN 22	-8.08	8.08	848.7	-8.08	8.08	806.5	0.0	-8.08	8.08	764.8	-8.08	8.08	724.0	-8.08	8.08	685.2	85.0	180.0	8.08	685.2
JUN 1 JUL 12	-7.92	7.92	794.3	-7.92	7.92	749.8	0.0	-7.92	7.92	706.1	-7.92	7.92	663.8	-7.92	7.92	623.7	85.0	180.0	7.92	623.7
MAY 18 JUL 27	-7.65	7.65	704.3	-7.65	7.65	656.0	0.0	-7.65	7.65	609.3	-7.65	7.65	564.6	-7.65	7.65	522.6	85.0	180.0	7.65	522.6
MAY 3 AUG 10	-7.29	7.29	582.5	-7.29	7.29	529.5	0.0	-7.29	7.29	479.2	-7.29	7.29	431.6	-7.29	7.29	387.5	85.0	180.0	7.29	387.5
APR 19 AUG 25	-6.89	6.89	439.9	-6.89	6.89	382.3	0.0	-6.89	6.89	328.4	-6.89	6.89	278.1	-6.89	6.89	231.9	85.0	180.0	6.89	231.9
APR 4 SEP 9	-6.45	6.45	290.2	-6.45	6.45	228.7	0.0	-6.45	6.45	171.9	-6.45	6.45	119.5	-6.45	6.45	71.9	85.0	180.0	6.45	71.9
MAR 21 SEP 23	-6.00	6.00	144.0	-6.00	6.00	79.9	0.0	-6.00	6.00	21.5	-6.00	6.00	0.0	-6.00	6.00	0.0	85.0	180.0	6.00	0.0
MAR 7 OCT 8	-3.44	3.44	32.5	-3.44	3.44	0.0	0.0	-3.44	3.44	0.0	-3.44	3.44	0.0	-3.44	3.44	0.0	85.0	180.0	3.44	0.0
FEB 20 OCT 22	0.00	0.00	0.0	0.00	0.00	0.0	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	85.0	180.0	0.00	0.0
FEB 7 NOV 5	0.00	0.00	0.0	0.00	0.00	0.0	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	85.0	180.0	0.00	0.0
JAN 23 NOV 19	0.00	0.00	0.0	0.00	0.00	0.0	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	85.0	180.0	0.00	0.0
JAN 10 DEC 3	0.00	0.00	0.0	0.00	0.00	0.0	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	85.0	180.0	0.00	0.0
DEC 22	0.00	0.00	0.0	0.00	0.00	0.0	0.0	0.00	0.00	0.0	0.00	0.00	0.0	0.00	0.00	0.0	85.0	180.0	0.00	0.0

NOTE - FOR ASPECTS WITH WEST COMPONENTS, THE TIME AND SIGN OF SR AND SS ARE REVERSED.

LATITUDE 50 N
ASPECT S -

		10 PCT				20 PCT				SLOPE				30 PCT				40 PCT				50 PCT												
		THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY			
		44.3	0.0				38.7	0.0				33.3	0.0				28.2	0.0				23.4	0.0				19.0	0.0						
		YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.			
		239.370	.4554	256.847	.4887	271.625	.5168	283.622	.5396	292.960	.5574																100 PCT							
		60 PCT				70 PCT				SLOPE				80 PCT				90 PCT				100 PCT												
		THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY			
		19.0	0.0				15.0	0.0				11.3	0.0				8.0	0.0				5.0	0.0											
JUN 22		-7.67	7.67	1024.0		-7.36	7.36	1021.6		-7.11	7.11	1013.4		-6.90	6.90	999.5		-6.72	6.72	981.1														
JUN 1 JUL 12		-7.54	7.54	1001.5		-7.26	7.26	1004.2		-7.02	7.02	1000.5		-6.83	6.83	990.8		-6.67	6.67	976.1														
MAY 18 JUL 27		-7.33	7.33	962.5		-7.09	7.09	973.5		-6.89	6.89	977.4		-6.72	6.72	974.6		-6.58	6.58	966.1														
MAY 3 AUG 10		-7.05	7.05	905.9		-6.86	6.86	928.0		-6.70	6.70	942.2		-6.57	6.57	949.0		-6.46	6.46	949.2														
APR 19 AUG 25		-6.72	6.72	833.5		-6.59	6.59	868.2		-6.49	6.49	894.4		-6.40	6.40	912.5		-6.32	6.32	923.1														
APR 4 SEP 9		-6.37	6.37	749.3		-6.30	6.30	790.8		-6.25	6.25	835.5		-6.20	6.20	865.5		-6.16	6.16	887.5														
MAR 21 SEP 23		-6.00	6.00	656.5		-6.00	6.00	715.9		-6.00	6.00	766.5		-6.00	6.00	808.2		-6.00	6.00	841.5														
MAR 7 OCT 8		-5.55	5.55	562.1		-5.55	5.55	630.8		-5.55	5.55	691.3		-5.55	5.55	742.9		-5.55	5.55	785.9														
FEB 20 OCT 22		-5.11	5.11	472.4		-5.11	5.11	547.3		-5.11	5.11	614.4		-5.11	5.11	673.0		-5.11	5.11	722.9														
FEB 7 NOV 5		-4.71	4.71	393.1		-4.71	4.71	470.9		-4.71	4.71	541.5		-4.71	4.71	604.0		-4.71	4.71	659.0														
JAN 23 NOV 19		-4.35	4.35	330.1		-4.35	4.35	408.4		-4.35	4.35	480.0		-4.35	4.35	543.9		-4.35	4.35	599.8														
JAN 10 DEC 3		-4.08	4.08	286.4		-4.08	4.08	363.9		-4.08	4.08	435.1		-4.08	4.08	499.0		-4.08	4.08	555.2														
DEC 22		-3.92	3.92	261.3		-3.92	3.92	337.8		-3.92	3.92	408.3		-3.92	3.92	471.7		-3.92	3.92	527.7														
JUN 22		-6.58	6.58	959.3		-6.45	6.45	935.3		-6.33	6.33	910.3		-6.23	6.23	884.9		-6.15	6.15	859.8														
JUN 1 JUL 12		-6.53	6.53	957.6		-6.41	6.41	936.5		-6.31	6.31	913.9		-6.22	6.22	890.8		-6.13	6.13	867.6														
MAY 18 JUL 27		-6.46	6.46	953.2		-6.36	6.36	937.1		-6.27	6.27	918.9		-6.19	6.19	899.6		-6.12	6.12	879.7														
MAY 3 AUG 10		-6.37	6.37	944.1		-6.29	6.29	935.0		-6.21	6.21	923.0		-6.15	6.15	909.1		-6.09	6.09	894.1														
APR 19 AUG 25		-6.25	6.25	927.6		-6.20	6.20	927.0		-6.15	6.15	922.7		-6.10	6.10	915.7		-6.06	6.06	906.8														
APR 4 SEP 9		-6.13	6.13	902.4		-6.10	6.10	911.4		-6.08	6.08	915.7		-6.05	6.05	916.4		-6.03	6.03	914.4														
MAR 21 SEP 23		-6.00	6.00	867.0		-6.00	6.00	885.9		-6.00	6.00	899.2		-6.00	6.00	908.1		-6.00	6.00	913.6														
MAR 7 OCT 8		-5.55	5.55	820.8		-5.55	5.55	848.5		-5.55	5.55	870.0		-5.55	5.55	886.4		-5.55	5.55	898.7														
FEB 20 OCT 22		-5.11	5.11	764.5		-5.11	5.11	798.8		-5.11	5.11	826.5		-5.11	5.11	848.6		-5.11	5.11	866.3														
FEB 7 NOV 5		-4.71	4.71	703.9		-4.71	4.71	742.3		-4.71	4.71	774.1		-4.71	4.71	800.1		-4.71	4.71	821.4														
JAN 23 NOV 19		-4.35	4.35	647.6		-4.35	4.35	688.2		-4.35	4.35	722.1		-4.35	4.35	750.3		-4.35	4.35	773.7														
JAN 10 DEC 3		-4.08	4.08	603.6		-4.08	4.08	644.9		-4.08	4.08	679.7		-4.08	4.08	708.8		-4.08	4.08	733.2														
DEC 22		-3.92	3.92	576.1		-3.92	3.92	617.5		-3.92	3.92	652.4		-3.92	3.92	681.8		-3.92	3.92	706.5														
		YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.			
		299.897	.5706	304.792	.5799	308.000	.5860	309.870	.5896	310.712	.5912																100 PCT							

NOTE - FOR ASPECTS WITH WEST COMPONENTS, THE TIME AND SIGN OF SR AND SS ARE REVERSED.

LATITUDE 50 N
ASPECT NNE - NNW

SLOPE										20 PCT			30 PCT			40 PCT			50 PCT										
										THETA	ALPHA		THETA	ALPHA		THETA	ALPHA		THETA	ALPHA									
										55.2	3.8		60.2	8.7		64.7	14.9		68.7	23.0		71.9	33.5						
										SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY	SR	SS	LY					
JUN 22										-8.08	8.08	991.7	-8.08	8.08	964.1	-8.08	8.08	930.1	-8.08	8.08	891.7								
JUN 1 JUL 12										-7.92	7.92	953.5	-7.92	7.92	921.6	-7.92	7.92	883.8	-7.92	7.92	842.3								
MAY 18 JUL 27										-7.65	7.65	889.1	-7.65	7.65	850.3	-7.65	7.65	806.7	-7.65	7.65	760.1								
MAY 3 AUG 10										-7.29	7.29	799.6	-7.29	7.29	752.2	-7.29	7.29	701.0	-7.29	7.29	648.1								
APR 19 AUG 25										-6.89	6.82	744.3	-6.89	6.61	635.0	-6.89	6.44	576.3	-6.89	6.18	517.8								
APR 4 SEP 9										-6.45	6.08	573.9	-6.45	5.81	509.9	-6.45	5.44	446.3	-6.45	4.94	385.7								
MAR 21 SEP 23										-6.00	5.42	453.3	-6.00	5.00	384.7	-6.00	4.46	319.6	-6.00	3.77	260.6								
MAR 7 OCT 8										-5.55	4.76	339.5	-5.55	4.20	269.6	-5.55	3.49	206.4	-5.55	2.59	152.8								
FEB 20 OCT 22										-5.11	4.11	240.1	-5.11	3.40	172.4	-5.11	2.48	114.4	-5.11	1.35	69.5								
FEB 7 NOV 5										-4.68	4.17	232.2	-4.68	2.59	97.1	-4.49	1.42	47.5	-4.31	-0.16	14.6								
JAN 23 NOV 19										-4.23	3.72	170.9	-4.06	2.90	102.7	-3.79	1.80	47.1	0.00	0.00	0.0								
JAN 10 DEC 3										-3.89	3.58	130.9	-3.60	2.44	67.2	-3.08	1.09	19.7	0.00	0.00	0.0								
DEC 22										-3.67	3.16	108.9	-3.29	2.13	48.8	-2.52	0.53	7.7	0.00	0.00	0.0								
										YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.						
										199.932	3804	179.935	3423	160.786	3059	144.027	2740	129.764	2469										

SLOPE										60 PCT				70 PCT				80 PCT				90 PCT				100 PCT													
										THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY										
										74.2	46.5				75.5	61.2				75.7	76.0				75.2	89.0				74.1	99.6								
										SR	SS	LY			SR	SS	LY			SR	SS	LY			SR	SS	LY			SR	SS	LY							
JUN 22										-8.08	8.08	850.7			-8.08	8.08	808.7			-8.08	8.08	767.1			-8.08	8.08	726.8			-8.08	8.08	688.0							
JUN 1 JUL 12										-7.92	7.92	798.7			-7.92	7.92	754.6			-7.92	7.92	711.2			-7.92	7.92	669.5			-7.92	7.92	629.7							
MAY 18 JUL 27										-7.65	7.65	712.3			-7.65	7.65	664.9			-7.65	7.65	618.9			-7.65	7.65	575.2			-7.65	7.65	533.9							
MAY 3 AUG 10										-7.29	7.29	595.3			-7.29	7.29	543.8			-7.29	7.29	494.7			-7.29	7.29	448.5			*	405.8								
APR 19 AUG 25										-6.89	5.78	461.4			-6.89	5.13	408.8			-6.89	4.22	362.3			-6.89	3.18	323.6			-6.89	2.19	292.8							
APR 4 SEP 9										-6.45	4.27	330.4			-6.45	3.41	282.4			-6.45	2.46	243.4			-6.45	1.52	213.3			-6.45	0.71	190.8							
MAR 21 SEP 23										-6.00	2.90	210.3			-6.00	1.92	170.1			-6.00	0.93	140.4			-6.00	0.07	119.4			-6.00	-0.64	104.8							
MAR 7 OCT 8										-5.55	1.54	110.8			-5.55	0.42	81.0			-5.55	-0.59	61.7			-5.55	-1.39	49.7			-5.55	-1.99	42.2							
FEB 20 OCT 22										-5.11	0.93	38.9			-5.11	-1.29	21.6			-5.11	-2.35	13.1			-5.11	-3.05	9.2			-5.11	-3.48	7.3							
FEB 7 NOV 5										-3.68	-2.52	*			0.00	0.00	0.0			0.00	0.00	0.0			0.00	0.00	0.0			0.00	0.00	0.0							
JAN 23 NOV 19										0.00	0.00	0.0			0.00	0.00	0.0			0.00	0.00	0.0			0.00	0.00	0.0			0.00	0.00	0.0							
JAN 10 DEC 3										0.00	0.00	0.0			0.00	0.00	0.0			0.00	0.00	0.0			0.00	0.00	0.0			0.00	0.00	0.0							
DEC 22										0.00	0.00	0.0			0.00	0.00	0.0			0.00	0.00	0.0			0.00	0.00	0.0			0.00	0.00	0.0							
										YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.				
										117.327	2232	106.624	2029	97.354	1852	89.397	1701	82.523	1570																				

NOTE - FOR ASPECTS WITH WEST COMPONENTS, THE TIME AND SIGN OF SR AND SS ARE REVERSED.

* Double Sunrise - Sunset

(1) 7.29 4.53 6.18 7.29

(2) 6.18 7.29

NOTE - FOR ASPECTS WITH WEST COMPONENTS, THE TIME AND SIGN OF SR AND SS ARE REVERSED.

Double Sunrise - Sunset
(1) -7.29 4.53
(2) 6.18 7.29

LATITUDE 50 N
ASPECT SSE - SSW

	10 PCT			20 PCT			30 PCT			40 PCT			50 PCT		
	THETA	ALPHA	SLOPE	THETA	ALPHA	SLOPE	THETA	ALPHA	SLOPE	THETA	ALPHA	SLOPE	THETA	ALPHA	SLOPE
	44.7	3.1		39.4	5.6		34.3	7.6		29.4	9.4		24.8	10.9	
YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.	YEAR	R.I.
JUN 22	-7.90	7.49	1023.9	-7.77	7.02	1022.3	-7.66	6.64	1015.3	-7.57	6.32	1003.3	-7.50	6.05	987.0
JUN 1 JUL 12	-7.77	7.36	1001.1	-7.66	6.92	1004.2	-7.57	6.55	1001.7	-7.50	6.25	995.8	-7.44	5.99	980.9
FEB 18 JUL 27	-7.57	7.15	961.5	-7.49	6.74	972.5	-7.43	6.41	977.2	-7.39	6.13	973.6	-7.35	5.90	968.1
MAY 3 AUG 10	-7.27	6.86	904.1	-7.25	6.51	925.6	-7.24	6.22	940.2	-7.23	5.98	948.0	-7.22	5.77	949.7
APR 19 AUG 25	-6.89	6.53	830.8	-6.89	6.24	868.2	-6.89	5.99	890.1	-6.89	5.79	908.6	-6.89	5.62	920.2
APR 4 SEP 9	-6.45	6.17	745.5	-6.45	5.94	790.6	-6.45	5.75	827.8	-6.45	5.59	857.1	-6.45	5.45	878.9
MAR 21 SEP 23	-6.00	5.80	651.7	-6.00	5.63	707.1	-6.00	5.49	754.5	-6.00	5.37	793.7	-6.00	5.28	825.0
MAR 7 OCT 8	-5.55	5.42	556.3	-5.55	5.32	619.8	-5.55	5.23	675.4	-5.55	5.16	722.8	-5.55	5.10	762.1
FEB 20 OCT 22	-5.11	5.06	466.1	-5.11	5.02	535.0	-5.11	4.99	596.4	-5.11	4.96	649.7	-5.11	4.93	695.0
FEB 7 NOV 5	-4.71	4.71	386.6	-4.71	4.71	458.2	-4.71	4.71	522.9	-4.71	4.71	579.9	-4.71	4.71	625.0
JAN 23 NOV 19	-4.35	4.35	323.6	-4.35	4.35	395.7	-4.35	4.35	461.4	-4.35	4.35	519.9	-4.35	4.35	570.9
JAN 10 DEC 3	-4.08	4.08	280.1	-4.08	4.08	351.5	-4.08	4.08	416.9	-4.08	4.08	475.5	-4.08	4.08	526.9
DEC 22	-3.92	3.92	255.1	-3.92	3.92	325.6	-3.92	3.92	390.4	-3.92	3.92	448.6	-3.92	3.92	499.8
JUN 22	-7.44	5.82	967.4	-7.38	5.62	945.7	-7.34	5.44	922.9	-7.29	5.29	899.7	-7.26	5.15	876.6
JUN 1 JUL 12	-7.39	5.77	964.5	-7.35	5.58	945.7	-7.31	5.41	925.4	-7.27	5.27	904.4	-7.24	5.13	883.2
MAY 18 JUL 27	-7.31	5.69	958.3	-7.29	5.52	946.3	-7.26	5.37	928.2	-7.24	5.23	911.0	-7.22	5.11	893.1
MAY 3 AUG 10	-7.21	5.59	946.4	-7.20	5.44	935.9	-7.20	5.30	929.3	-7.19	5.18	917.4	-7.19	5.08	904.3
APR 19 AUG 25	-6.89	5.47	896.1	-6.89	5.34	923.1	-6.89	5.22	924.5	-6.89	5.12	919.2	-6.89	5.04	911.9
APR 4 SEP 9	-6.45	5.33	824.1	-6.45	5.23	907.8	-6.45	5.14	908.9	-6.45	5.06	910.5	-6.45	4.99	903.5
MAR 21 SEP 23	-6.00	5.19	849.0	-6.00	5.12	866.9	-6.00	5.05	879.5	-6.00	5.00	887.9	-6.00	4.95	893.0
MAR 7 OCT 8	-5.55	5.05	793.7	-5.55	5.00	818.7	-5.55	4.96	837.9	-5.55	4.93	852.4	-5.55	4.90	863.1
FEB 20 OCT 22	-5.11	4.91	732.5	-5.11	4.90	763.1	-5.11	4.88	787.6	-5.11	4.87	807.1	-5.11	4.85	822.4
FEB 7 NOV 5	-4.71	4.71	670.6	-4.71	4.71	705.1	-4.71	4.71	733.6	-4.71	4.71	756.7	-4.71	4.71	775.5
JAN 23 NOV 19	-4.35	4.35	614.5	-4.35	4.35	651.2	-4.35	4.35	681.8	-4.35	4.35	707.1	-4.35	4.35	728.1
JAN 10 DEC 3	-4.08	4.08	571.0	-4.08	4.08	608.6	-4.08	4.08	640.1	-4.08	4.08	666.4	-4.08	4.08	688.4
DEC 22	-3.92	3.92	544.0	-3.92	3.92	581.7	-3.92	3.92	613.5	-3.92	3.92	640.1	-3.92	3.92	662.4
JUN 22	-7.90	7.49	1023.9	-7.77	7.02	1022.3	-7.66	6.64	1015.3	-7.57	6.32	1003.3	-7.50	6.05	987.0
JUN 1 JUL 12	-7.77	7.36	1001.1	-7.66	6.92	1004.2	-7.57	6.55	1001.7	-7.50	6.25	995.8	-7.44	5.99	980.9
FEB 18 JUL 27	-7.57	7.15	961.5	-7.49	6.74	972.5	-7.43	6.41	977.2	-7.39	6.13	973.6	-7.35	5.90	968.1
MAY 3 AUG 10	-7.27	6.86	904.1	-7.25	6.51	925.6	-7.24	6.22	940.2	-7.23	5.98	948.0	-7.22	5.77	949.7
APR 19 AUG 25	-6.89	6.53	830.8	-6.89	6.24	868.2	-6.89	5.99	890.1	-6.89	5.79	908.6	-6.89	5.62	920.2
APR 4 SEP 9	-6.45	6.17	745.5	-6.45	5.94	790.6	-6.45	5.75	827.8	-6.45	5.59	857.1	-6.45	5.45	878.9
MAR 21 SEP 23	-6.00	5.80	651.7	-6.00	5.63	707.1	-6.00	5.49	754.5	-6.00	5.37	793.7	-6.00	5.28	825.0
MAR 7 OCT 8	-5.55	5.42	556.3	-5.55	5.32	619.8	-5.55	5.23	675.4	-5.55	5.16	722.8	-5.55	5.10	762.1
FEB 20 OCT 22	-5.11	5.06	466.1	-5.11	5.02	535.0	-5.11	4.99	596.4	-5.11	4.96	649.7	-5.11	4.93	695.0
FEB 7 NOV 5	-4.71	4.71	386.6	-4.71	4.71	458.2	-4.71	4.71	522.9	-4.71	4.71	579.9	-4.71	4.71	625.0
JAN 23 NOV 19	-4.35	4.35	323.6	-4.35	4.35	395.7	-4.35	4.35	461.4	-4.35	4.35	519.9	-4.35	4.35	570.9
JAN 10 DEC 3	-4.08	4.08	280.1	-4.08	4.08	351.5	-4.08	4.08	416.9	-4.08	4.08	475.5	-4.08	4.08	526.9
DEC 22	-3.92	3.92	255.1	-3.92	3.92	325.6	-3.92	3.92	390.4	-3.92	3.92	448.6	-3.92	3.92	499.8
JUN 22	-7.44	5.82	967.4	-7.38	5.62	945.7	-7.34	5.44	922.9	-7.29	5.29	899.7	-7.26	5.15	876.6
JUN 1 JUL 12	-7.39	5.77	964.5	-7.35	5.58	945.7	-7.31	5.41	925.4	-7.27	5.27	904.4	-7.24	5.13	883.2
MAY 18 JUL 27	-7.31	5.69	958.3	-7.29	5.52	946.3	-7.26	5.37	928.2	-7.24	5.23	911.0	-7.22	5.11	893.1
MAY 3 AUG 10	-7.21	5.59	946.4	-7.20	5.44	935.9	-7.20	5.30	929.3	-7.19	5.18	917.4	-7.19	5.08	904.3
APR 19 AUG 25	-6.89	5.47	896.1	-6.89	5.34	923.1	-6.89	5.22	924.5	-6.89	5.12	919.2	-6.89	5.04	911.9
APR 4 SEP 9	-6.45	5.33	824.1	-6.45	5.23	907.8	-6.45	5.14	908.9	-6.45	5.06	910.5	-6.45	4.99	903.5
MAR 21 SEP 23	-6.00	5.19	849.0	-6.00	5.12	866.9	-6.00	5.05	879.5	-6.00	5.00	887.9	-6.00	4.95	893.0
MAR 7 OCT 8	-5.55	5.05	793.7	-5.55	5.00	818.7	-5.55	4.96	837.9	-5.55	4.93	852.4	-5.55	4.90	863.1
FEB 20 OCT 22	-5.11	4.91	732.5	-5.11	4.90	763.1	-5.11	4.88	787.6	-5.11	4.87	807.1	-5.11	4.85	822.4
FEB 7 NOV 5	-4.71	4.71	670.6	-4.71	4.71	705.1	-4.71	4.71	733.6	-4.71	4.71	756.7	-4.71	4.71	775.5
JAN 23 NOV 19	-4.35	4.35	614.5	-4.35	4.35	651.2	-4.35	4.35	681.8	-4.35	4.35	707.1	-4.35	4.35	728.1
JAN 10 DEC 3	-4.08	4.08	571.0	-4.08	4.08	608.6	-4.08	4.08	640.1	-4.08	4.08	666.4	-4.08	4.08	688.4
DEC 22	-3.92	3.92	544.0	-3.92	3.92	581.7	-3.92	3.92	613.5	-3.92	3.92	640.1	-3.92	3.92	662.4
JUN 22	-7.90	7.49	1023.9	-7.77	7.02	1022.3	-7.66	6.64	1015.3	-7.57	6.32	1003.3	-7.50	6.05	987.0
JUN 1 JUL 12	-7.77	7.36	1001.1	-7.66	6.92	1004.2	-7.57	6.55	1001.7	-7.50	6.25	995.8	-7.44	5.99	980.9
FEB 18 JUL 27	-7.57	7.15	961.5	-7.49	6.74	972.5	-7.43	6.41	977.2	-7.39	6.13	973.6	-7.35	5.90	968.1
MAY 3 AUG 10	-7.27	6.86	904.1	-7.25	6.51	925.6	-7.24	6.22	940.2	-7.23	5.98	948.0	-7.22	5.77	949.7
APR 19 AUG 25	-6.89	6.53	830.8	-6.89	6.24	868.2	-6.89	5.99	890.1	-6.89	5.79	908.6	-6.89	5.62	920.2
APR 4 SEP 9	-6.45	6.17	745.5	-6.45	5.94	790.6	-6.45	5.75	827.8	-6.45	5.59	857.1	-6.45	5.45	878.9
MAR 21 SEP 23	-6.00	5.80	651.7	-6.00	5.63	707.1	-6.00	5.49	754.5	-6.00	5.37	793.7	-6.00	5.28	825.0
MAR 7 OCT 8	-5.55	5.42	556.3	-5.55	5.32	619.8	-5.55	5.23	675.4	-5.55	5.16	722.8	-5.55	5.10	762.1
FEB 20 OCT 22	-5.11	5.06	466.1	-5.11	5.02	535.0	-5.11	4.99	596.4	-5.11	4.96	649.7	-5.11	4.93	695.0
FEB 7 NOV 5	-4.71	4.71	386.6	-4.71	4.71	458.2	-4.71	4.71	522.9	-4.71	4.71	579.9	-4.71	4.71	625.0
JAN 23 NOV 19	-4.35	4.35	323.6	-4.35	4.35	395.7	-4.35	4.35	461.4	-4.35	4.35	519.9	-4.35	4.35	570.9
JAN 10 DEC 3	-4.08	4.08	280.1	-4.08	4.08	351.5	-4.08	4.08	416.9	-4.08	4.08	475.5	-4.08	4.08	526.9
DEC 22	-3.92	3.92	255.1	-3.92	3.92	325.6	-3.92	3.92	390.4	-3.92	3.92	448.6	-3.92	3.92	499.8
JUN 22	-7.44	5.82	967.4	-7.38	5.62	945.7	-7.34	5.44	922.9	-7.29	5.29	899.7	-7.26	5.15	876.6
JUN 1 JUL 12	-7.39	5.77	964.5	-7.35	5.58	945.7	-7.31	5.41	925.4	-7.27	5.27	904.4	-7.24	5.13	883.2
MAY 18 JUL 27	-7.31	5.69	958.3	-7.29	5.52	946.3	-7.26	5.37	928.2	-7.24	5.23	911.0	-7.22	5.11	893.1
MAY 3 AUG 10	-7.21	5.59	946.4	-7.20	5.44	935.9	-7.20	5.30	929.3	-7.19	5.18	917.4	-7.19	5.08	904.3
APR 19 AUG 25	-6.89	5.47	896.1	-6.89	5.34	923.1	-6.89	5.22	924.5	-6.89	5.12	919.2	-6.89	5.04	911.9
APR 4 SEP 9	-6.45	5.33	824.1	-6.45	5.23	907.8	-6.45	5.14	908.9	-6.45	5.06	910.5	-6.45	4.99	903.5
MAR 21 SEP 23	-6.00	5.19	849.0	-6.00	5.12	866.9	-6.00	5.05	879.5	-6.00	5.00	887.9	-6.00	4.95	893.0
MAR 7 OCT 8	-5.55	5.05	793.7	-5.55	5.00	818.7	-5.55	4.96	837.9	-5.55	4.93	852.4	-5.55	4.90	863.1
FEB 20 OCT 22	-5.11	4.91	732.5	-5.11	4.90	763.1	-5.11	4.88	787.6	-5.11	4.87	807.1	-5.11	4.85	822.4
FEB 7 NOV 5	-4.71	4.71	670.6	-4.71	4.71	705.1	-4.71	4.71	733.6	-4.71	4.71	756.7	-4.71	4.71	775.5
JAN 23 NOV 19	-4.35	4.35	614.5	-4.35	4.35	651.2	-4.35	4.35	681.8	-4.35	4.35	707.1	-4.35	4.35	728.1
JAN 10 DEC 3	-4.08	4.08	571.0	-4.08	4.08	608.6	-4.08	4.08	640.1	-4.08	4.08	666.4</			

NOTE - FOR ASPECTS WITH WEST COMPONENTS, THE TIME AND SIGN OF SR AND SS ARE REVERSED.

LATITUDE 50 N
ASPECT NE - NW

	SLOPE																		50 PCT											
	10 PCT						20 PCT						30 PCT						40 PCT						50 PCT					
	THETA	ALPHA	LY	SR	SS	LY	THETA	ALPHA	LY	SR	SS	LY	THETA	ALPHA	LY	SR	SS	LY	THETA	ALPHA	LY	SR	SS	LY	THETA	ALPHA	LY	SR	SS	LY
JUN 22	-8.08	7.98	1012.3	-8.08	7.84	994.2	-8.08	7.64	968.2	-8.08	7.34	936.2	-8.08	7.04	904.2	-8.08	6.74	872.2	-8.08	6.44	840.2	-8.08	6.14	808.2	-8.08	5.84	776.2	-8.08	5.54	744.2
JUN 1 JUL 12	-7.92	7.78	980.3	-7.92	7.59	956.8	-7.92	7.34	930.1	-7.92	7.04	898.1	-7.92	6.74	866.1	-7.92	6.44	834.1	-7.92	6.14	802.1	-7.92	5.84	770.1	-7.92	5.54	738.1	-7.92	5.24	706.1
JUN 18 JUL 27	-7.65	7.46	925.9	-7.65	7.21	895.1	-7.65	6.88	866.4	-7.65	6.53	837.7	-7.65	6.18	809.0	-7.65	5.83	780.3	-7.65	5.48	751.6	-7.65	5.13	722.9	-7.65	4.78	694.2	-7.65	4.43	665.5
MAY 3 AUG 10	-7.29	7.04	849.4	-7.29	6.72	816.1	-7.29	6.32	778.6	-7.29	5.92	740.8	-7.29	5.52	703.0	-7.29	5.12	665.2	-7.29	4.72	627.4	-7.29	4.32	589.6	-7.29	3.92	551.8	-7.29	3.52	514.0
MAY 19 AUG 25	-6.89	6.56	755.1	-6.89	6.17	715.1	-6.89	5.70	673.0	-6.89	5.30	635.2	-6.89	4.90	597.4	-6.89	4.50	559.6	-6.89	4.10	521.8	-6.89	3.70	484.0	-6.89	3.30	446.2	-6.89	2.90	408.4
APR 4 SEP 9	-6.45	6.06	649.9	-6.45	5.60	604.0	-6.45	5.06	558.5	-6.45	4.46	516.5	-6.45	3.86	479.0	-6.45	3.26	441.5	-6.45	2.66	404.0	-6.45	2.06	366.5	-6.45	1.46	329.0	-6.45	0.86	291.5
MAR 21 SEP 23	-6.00	5.54	539.0	-6.00	5.01	488.8	-6.00	4.41	441.6	-6.00	3.76	399.2	-6.00	3.16	356.4	-6.00	2.56	313.6	-6.00	1.96	270.8	-6.00	1.36	228.0	-6.00	0.76	185.2	-6.00	0.16	142.4
MAR 7 OCT 8	-5.55	5.03	431.2	-5.55	4.42	378.8	-5.55	3.76	331.6	-5.55	3.06	291.3	-5.55	2.41	244.1	-5.55	1.76	196.8	-5.55	1.16	153.6	-5.55	0.56	110.4	-5.55	-0.04	67.2	-5.55	-0.64	24.0
FEB 20 OCT 22	-5.11	4.52	333.8	-5.11	3.85	281.2	-5.11	3.12	236.0	-5.11	2.42	190.8	-5.11	1.72	145.6	-5.11	1.02	100.4	-5.11	0.32	55.2	-5.11	-0.38	10.0	-5.11	-0.98	-35.2	-5.11	-1.58	-90.4
FEB 7 NOV 5	-4.71	4.05	252.0	-4.71	3.30	201.1	-4.71	2.50	159.3	-4.71	1.70	117.5	-4.71	0.90	75.7	-4.71	0.10	34.1	-4.71	-0.70	-10.9	-4.71	-1.30	-65.1	-4.71	-1.90	-120.1	-4.71	-2.50	-175.3
JAN 23 NOV 19	-4.35	3.63	190.2	-4.35	2.81	144.1	-4.35	1.94	104.3	-4.35	1.14	62.5	-4.35	0.34	20.7	-4.35	-0.46	-21.1	-4.35	-1.06	-76.3	-4.35	-1.66	-131.5	-4.35	-2.26	-186.9	-4.35	-2.86	-242.3
JAN 10 DEC 3	-4.08	3.31	149.6	-4.08	2.43	104.2	-4.08	1.49	70.1	-4.08	0.69	26.1	-4.08	-0.11	-18.9	-4.08	-0.71	-73.3	-4.08	-1.31	-128.7	-4.08	-1.91	-184.1	-4.08	-2.51	-239.5	-4.08	-3.11	-294.9
DEC 22	-3.92	3.11	127.0	-3.92	2.19	83.7	-3.92	1.19	52.1	-3.92	0.39	10.1	-3.92	-0.41	-51.9	-3.92	-1.01	-107.3	-3.92	-1.61	-162.7	-3.92	-2.21	-218.1	-3.92	-2.81	-273.5	-3.92	-3.41	-328.9
JUN 22	-8.08	6.35	863.8	-8.08	5.68	828.2	-8.08	4.99	795.3	-8.08	4.33	766.2	-8.08	3.67	737.1	-8.08	3.01	708.0	-8.08	2.35	678.9	-8.08	1.69	649.8	-8.08	1.03	620.7	-8.08	0.37	591.6
JUN 1 JUL 12	-7.92	5.94	822.7	-7.92	5.28	787.6	-7.92	4.62	755.6	-7.92	3.96	724.5	-7.92	3.30	693.4	-7.92	2.64	662.3	-7.92	1.98	631.2	-7.92	1.32	600.1	-7.92	0.66	569.0	-7.92	0.00	537.9
MAY 18 JUL 27	-7.65	5.35	755.0	-7.65	4.72	720.8	-7.65	4.09	690.3	-7.65	3.45	660.8	-7.65	2.82	631.3	-7.65	2.18	601.8	-7.65	1.55	572.3	-7.65	0.91	542.8	-7.65	0.27	513.3	-7.65	-0.37	483.8
MAY 3 AUG 10	-7.29	4.66	663.7	-7.29	4.04	631.1	-7.29	3.45	602.7	-7.29	2.82	573.2	-7.29	2.18	543.7	-7.29	1.55	514.2	-7.29	0.91	484.7	-7.29	0.27	455.7	-7.29	-0.37	426.7	-7.29	-1.03	397.7
APR 19 AUG 25	-6.89	3.94	556.9	-6.89	3.33	526.5	-6.89	2.66	497.0	-6.89	2.00	467.5	-6.89	1.34	438.0	-6.89	0.68	408.5	-6.89	0.02	379.0	-6.89	-0.64	349.5	-6.89	-1.30	320.0	-6.89	-1.96	290.5
APR 4 SEP 9	-6.45	3.20	444.3	-6.45	2.60	416.9	-6.45	1.94	389.5	-6.45	1.28	362.1	-6.45	0.62	334.7	-6.45	-0.04	307.3	-6.45	-0.68	277.9	-6.45	-1.32	248.5	-6.45	-1.96	209.1	-6.45	-2.60	169.7
MAR 21 SEP 23	-6.00	2.46	333.4	-6.00	1.87	309.7	-6.00	1.23	291.0	-6.00	0.59	272.2	-6.00	-0.05	243.4	-6.00	-0.69	204.0	-6.00	-1.33	164.6	-6.00	-1.97	125.2	-6.00	-2.61	85.8	-6.00	-3.25	46.4
MAR 7 OCT 8	-5.55	1.71	233.1	-5.55	1.14	213.6	-5.55	0.64	198.9	-5.55	0.04	174.4	-5.55	-0.56	145.6	-5.55	-1.16	106.8	-5.55	-1.80	67.2	-5.55	-2.44	27.6	-5.55	-3.08	-12.0	-5.55	-3.72	-67.6
FEB 20 OCT 22	-5.11	0.97	150.3	-5.11	0.41	135.1	-5.11	0.06	124.2	-5.11	-0.54	85.4	-5.11	-1.14	46.6	-5.11	-1.74	7.0	-5.11	-2.34	-52.2	-5.11	-2.94	-107.6	-5.11	-3.54	-163.0	-5.11	-4.14	-218.4
FEB 7 NOV 5	-4.71	0.25	87.9	-4.71	-0.31	77.0	-4.71	-0.75	69.5	-4.71	-1.35	34.9	-4.71	-1.95	-10.9	-4.71	-2.55	-66.3	-4.71	-3.15	-121.7	-4.71	-3.75	-177.1	-4.71	-4.35	-232.5	-4.71	-4.95	-287.9
JAN 23 NOV 19	-4.35	-0.44	46.9	-4.35	-0.98	39.5	-4.35	-1.38	34.9	-4.35	-1.78	29.9	-4.35	-2.18	24.9	-4.35	-2.58	19.9	-4.35	-2.98	14.9	-4.35	-3.38	9.9	-4.35	-3.78	4.9	-4.35	-4.18	-0.1
JAN 10 DEC 3	-4.08	-1.03	24.0	-4.08	-1.55	19.3	-4.08	-1.92	16.5	-4.08	-2.32	11.5	-4.08	-2.72	6.5	-4.08	-3.12	1.5	-4.08	-3.52	-43.5	-4.08	-3.92	-98.5	-4.08	-4.32	-153.5	-4.08	-4.72	-208.5
DEC 22	-3.92	-1.44	13.5	-3.92	-1.95	10.3	-3.92	-2.32	8.6	-3.92	-2.72	3.6	-3.92	-3.12	-1.4	-3.92	-3.52	-56.4	-3.92	-3.92	-111.4	-3.92	-4.32	-166.4	-3.92	-4.72	-221.4	-3.92	-5.12	-276.4
JUN 22	-8.08	6.35	863.8	-8.08	5.68	828.2	-8.08	4.99	795.3	-8.08	4.33	766.2	-8.08	3.67	737.1	-8.08	3.01	708.0	-8.08	2.35	678.9	-8.08	1.69	649.8	-8.08	1.03	620.7	-8.08	0.37	591.6
JUN 1 JUL 12	-7.92	5.94	822.7	-7.92	5.28	787.6	-7.92	4.62	755.6	-7.92	3.96	724.5	-7.92	3.30	693.4	-7.92	2.64	662.3	-7.92	1.98	631.2	-7.92	1.32	600.1	-7.92	0.66	569.0	-7.92	0.00	537.9
MAY 18 JUL 27	-7.65	5.35	755.0	-7.65	4.72	720.8	-7.65	4.09	690.3	-7.65	3.45	660.8	-7.65	2.82	631.3	-7.65	2.18	601.8	-7.65	1.55	572.3	-7.65	0.91	542.8	-7.65	0.27	513.3	-7.65	-0.37	483.8
MAY 3 AUG 10	-7.29	4.66	663.7	-7.29	4.04	631.1	-7.29	3.45	602.7	-7.29	2.82	573.2	-7.29	2.18	543.7	-7.29	1.55	514.2	-7.29	0.91	484.7	-7.29	0.27	455.7	-7.29	-0.37	426.7	-7.29	-1.03	397.7
APR 19 AUG 25	-6.89	3.94	556.9	-6.89	3.33	526.5	-6.89	2.66	497.0	-6.89	2.00	467.5	-6.89	1.34	438.0	-6.89	0.68	408.5	-6.89	0.02	379.0	-6.89	-0.64	349.5	-6.89	-1.30	320.0	-6.89	-1.96	290.5
APR 4 SEP 9	-6.45	3.20	444.3	-6.45	2.60	416.9	-6.45	1.94	389.5	-6.45	1.28	362.1	-6.45	0.62	334.7	-6.45	-0.04	307.3	-6.45	-0.68	277.9	-6.45	-1.32	248.5	-6.45	-1.96	209.1	-6.45	-2.60	169.7
MAR 21 SEP 23	-6.00	2.46	333.4	-6.00	1.87	309.7	-6.00	1.23	291.0	-6.00	0.59	272.2	-6.00	-0.05	243.4	-6.00	-0.69	204.0	-6.00	-1.33	164.6	-6.00	-1.97	125.2	-6.00	-2.61	85.8	-6.00	-3.25	46.4
MAR 7 OCT 8	-5.55	1.71	233.1	-5.55	1.14	213.6	-5.55	0.64	198.9	-5.55	0.04	174.4	-5.55	-0.56	145.6	-5.55	-1.16	106.8	-5.55	-1.80	67.2	-5.55	-2.44	27.6	-5.55	-3.08	-12.0	-5.55	-3.72	-67.6
FEB 20 OCT 22	-5.11	0.97	150.3	-5.11	0.41	135.1	-5.11	0.06	124.2	-5.11	-0.54	85.4	-5.11	-1.14	46.6	-5.11	-1.74	7.0	-5.11	-2.34	-52.2	-5.11	-2.94	-107.6	-5.11	-3.54	-163.0	-5.11	-4.14	-218.4
FEB 7 NOV 5	-4.71	0.25	87.9	-4.71	-0.31	77.0	-4.71	-0.75	69.5	-4.71	-1.35	34.9	-4.71	-1.95	-10.9	-4.71	-2.55	-66.3	-4.71	-3.15	-121.7	-4.71	-3.75	-177.1	-4.71	-4.35	-232.5	-4.71	-4.95	-287.9
JAN 23 NOV 19	-4.35	-0.44	46.9	-4.35	-0.98	39.5	-4.35	-1.38	34.9	-4.35	-1.78	29.9	-4.35	-2.18	24.9	-4.35	-2.58	19.9	-4.35	-2.98	14.9	-4.35	-3.38	9.9	-4.35	-3.78	4.9	-4.35	-4.18	-0.1
JAN 10 DEC 3	-4.08	-1.03	24.0	-4.08	-1.55	19.3	-4.08	-1.92	16.5	-4.08	-2.32	11.5	-4.08	-2.72	6.5	-4.08	-3.12	1.5	-4.08	-3.52	-43.5	-4.08	-3.92	-98.5	-4.08	-4.32	-153.5	-4.08	</	

LATITUDE 50 N
ASPECT SE - SW

	SLOPE										SLOPE										SLOPE									
	10 PCT					20 PCT					30 PCT					40 PCT					50 PCT									
	THETA	ALPHA	SS	LY	SR	THETA	ALPHA	SS	LY	SR	THETA	ALPHA	SS	LY	SR	THETA	ALPHA	SS	LY	SR	THETA	ALPHA	SS	LY	SR	THETA	ALPHA	SS	LY	
JUN 22	-8.08	7.38	1023.6			-8.08	6.79	1023.4			-8.08	6.30	1019.5			-8.08	5.87	1011.8			-8.08	5.51	1000.7			-8.08	5.15	990.8		
JUN 1 JUL 12	-7.92	7.25	999.6			-7.92	6.68	1003.3			-7.92	6.20	1003.1			-7.92	5.79	998.8			-7.92	5.44	990.8			-7.92	5.08	980.9		
MAY 18 JUL 27	-7.65	7.02	958.2			-7.65	6.49	968.2			-7.65	6.04	973.9			-7.65	5.66	975.1			-7.65	5.33	972.1			-7.65	4.97	962.1		
MAY 3 AUG 10	-7.29	6.72	898.3			-7.29	6.24	916.6			-7.29	5.83	930.0			-7.29	5.48	938.5			-7.29	5.18	942.1			-7.29	4.82	932.1		
APR 19 AUG 25	-6.89	6.38	822.1			-6.89	5.94	849.4			-6.89	5.58	871.5			-6.89	5.26	888.0			-6.89	5.00	899.2			-6.89	4.64	889.2		
APR 4 SEP 9	-6.45	6.00	734.0			-6.45	5.62	770.2			-6.45	5.30	800.7			-6.45	5.03	825.2			-6.45	4.80	843.9			-6.45	4.44	834.9		
MAR 21 SEP 23	-6.00	5.61	637.7			-6.00	5.29	681.5			-6.00	5.02	719.5			-6.00	4.79	751.1			-6.00	4.59	776.5			-6.00	4.23	767.5		
MAR 7 OCT 8	-5.55	5.23	540.3			-5.55	4.96	589.9			-5.55	4.73	633.7			-5.55	4.54	671.0			-5.55	4.38	701.9			-5.55	4.02	692.9		
FEB 20 OCT 22	-5.11	4.85	448.8			-5.11	4.63	502.1			-5.11	4.46	549.6			-5.11	4.31	590.8			-5.11	4.18	625.5			-5.11	3.82	616.5		
FEB 7 NOV 5	-4.71	4.50	368.7			-4.71	4.34	423.5			-4.71	4.20	472.8			-4.71	4.09	516.1			-4.71	4.00	553.1			-4.71	3.64	544.1		
JAN 23 NOV 19	-4.35	4.20	305.6			-4.35	4.09	360.4			-4.35	3.99	410.2			-4.35	3.91	454.2			-4.35	3.85	492.1			-4.35	3.49	483.1		
JAN 10 DEC 3	-4.08	3.98	262.3			-4.08	3.90	316.4			-4.08	3.83	365.8			-4.08	3.78	409.6			-4.08	3.74	447.7			-4.08	3.38	438.7		
DEC 22	-3.92	3.84	237.5			-3.92	3.78	291.0			-3.92	3.74	339.8			-3.92	3.70	383.3			-3.92	3.67	421.3			-3.92	3.31	412.3		
JUN 22	-8.08	5.20	986.9			-8.08	4.93	971.0			-8.08	4.70	954.0			-8.08	4.50	936.3			-8.08	4.32	918.5			-8.08	4.18	903.0		
JUN 1 JUL 12	-7.92	5.15	979.7			-7.92	4.89	966.3			-7.92	4.66	951.4			-7.92	4.47	935.7			-7.92	4.29	919.6			-7.92	4.15	913.5		
MAY 18 JUL 27	-7.65	5.05	965.5			-7.65	4.81	956.2			-7.65	4.60	944.9			-7.65	4.41	932.4			-7.65	4.25	919.1			-7.65	4.11	913.5		
MAY 3 AUG 10	-7.29	4.92	941.6			-7.29	4.70	937.7			-7.29	4.50	931.2			-7.29	4.33	923.0			-7.29	4.18	913.5			-7.29	4.04	907.9		
APR 19 AUG 25	-6.89	4.77	905.5			-6.89	4.57	907.8			-6.89	4.40	906.9			-6.89	4.24	903.6			-6.89	4.11	898.8			-6.89	3.97	892.9		
APR 4 SEP 9	-6.45	4.60	857.1			-6.45	4.43	865.6			-6.45	4.28	870.4			-6.45	4.15	872.3			-6.45	4.03	871.8			-6.45	3.89	865.9		
MAR 21 SEP 23	-6.00	4.42	796.1			-6.00	4.28	810.5			-6.00	4.15	820.7			-6.00	4.04	827.4			-6.00	3.94	831.3			-6.00	3.80	825.4		
MAR 7 OCT 8	-5.55	4.25	726.7			-5.55	4.13	746.0			-5.55	4.03	760.8			-5.55	3.94	771.7			-5.55	3.86	779.6			-5.55	3.72	773.7		
FEB 20 OCT 22	-5.11	4.08	654.1			-5.11	3.99	677.2			-5.11	3.91	695.5			-5.11	3.84	709.7			-5.11	3.78	720.7			-5.11	3.64	715.7		
FEB 7 NOV 5	-4.71	3.92	584.1			-4.71	3.86	609.6			-4.71	3.80	630.3			-4.71	3.75	646.8			-4.71	3.70	660.1			-4.71	3.56	655.1		
JAN 23 NOV 19	-4.35	3.79	524.2			-4.35	3.75	551.0			-4.35	3.71	573.1			-4.35	3.67	591.1			-4.35	3.64	605.7			-4.35	3.50	600.7		
JAN 10 DEC 3	-4.08	3.70	480.2			-4.08	3.67	507.5			-4.08	3.64	530.2			-4.08	3.62	548.9			-4.08	3.60	563.3			-4.08	3.46	558.3		
DEC 22	-3.92	3.64	453.8			-3.92	3.62	481.2			-3.92	3.60	504.1			-3.92	3.58	523.1			-3.92	3.57	538.8			-3.92	3.43	533.8		
	YEAR	R.I.	YEAR	R.I.	YEAR	YEAR	R.I.	YEAR	R.I.	YEAR	YEAR	R.I.	YEAR	R.I.	YEAR	YEAR	R.I.	YEAR	R.I.	YEAR	YEAR	R.I.	YEAR	R.I.	YEAR	YEAR	YEAR	YEAR	YEAR	R.I.
	278.636	5301	282.247	5370	284.552	5414	285.816	5438	286.278	5447																				

NOTE - FOR ASPECTS WITH WEST COMPONENTS, THE TIME AND SIGN OF SR AND SS ARE REVERSED.

LATITUDE 50 N
ASPECT ENE - MNW

		10 PCT			20 PCT			SLOPE			30 PCT			40 PCT			50 PCT		
		THETA	ALPHA	LY	THETA	ALPHA	LY	THETA	ALPHA	LY	THETA	ALPHA	LY	THETA	ALPHA	LY	THETA	ALPHA	LY
JUN 22		-8.08	7.67	1015.0	-8.08	7.19	1002.3	-8.08	6.63	984.7	-8.08	6.05	964.3	-8.08	5.45	942.9	-8.08	5.45	942.9
JUN 1 JUL 12		-7.92	7.49	985.0	-7.92	6.99	971.0	-7.92	6.44	952.7	-7.92	5.85	932.1	-7.92	5.27	911.0	-7.92	5.27	911.0
MAY 18 JUL 27		-7.65	7.20	933.8	-7.65	6.68	917.8	-7.65	6.12	898.4	-7.65	5.54	877.7	-7.65	4.96	857.0	-7.65	4.96	857.0
MAY 3 AUG 10		-7.29	6.82	861.4	-7.29	6.28	842.8	-7.29	5.71	822.3	-7.29	5.13	801.5	-7.29	4.55	781.6	-7.29	4.55	781.6
APR 19 AUG 25		-6.89	6.38	771.5	-6.89	5.82	750.4	-6.89	5.24	728.9	-6.89	4.66	708.3	-6.89	4.08	689.4	-6.89	4.08	689.4
APR 4 SEP 9		-6.45	5.91	670.4	-6.45	5.33	647.0	-6.45	4.74	625.0	-6.45	4.16	605.0	-6.45	3.58	587.6	-6.45	3.58	587.6
MAR 21 SEP 23		-6.00	5.43	563.0	-6.00	4.83	538.1	-6.00	4.23	516.1	-6.00	3.66	497.3	-6.00	3.14	481.6	-6.00	3.14	481.6
MAR 7 OCT 8		-5.55	4.95	457.5	-5.55	4.33	432.1	-5.55	3.72	410.7	-5.55	3.15	393.4	-5.55	2.64	379.7	-5.55	2.64	379.7
FEB 20 OCT 22		-5.11	4.48	361.4	-5.11	3.84	336.2	-5.11	3.22	316.1	-5.11	2.66	300.6	-5.11	2.16	288.9	-5.11	2.16	288.9
FEB 7 NOV 5		-4.71	4.04	279.8	-4.71	3.38	255.6	-4.71	2.75	237.1	-4.71	2.19	223.5	-4.71	1.71	213.7	-4.71	1.71	213.7
JAN 23 NOV 19		-4.35	3.66	217.5	-4.35	2.97	194.7	-4.35	2.34	177.9	-4.35	1.78	166.0	-4.35	1.31	157.9	-4.35	1.31	157.9
JAN 10 DEC 3		-4.08	3.37	176.1	-4.08	2.67	154.5	-4.08	2.02	139.1	-4.08	1.47	128.6	-4.08	1.01	121.7	-4.08	1.01	121.7
DEC 22		-3.92	3.18	152.9	-3.92	2.47	132.2	-3.92	1.82	117.8	-3.92	1.27	108.2	-3.92	0.82	102.0	-3.92	0.82	102.0
		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.	
		211.677	4.027		204.072	3.883		197.083	3.750		190.854	3.631		185.416	3.528				
		60 PCT			70 PCT			SLOPE			80 PCT			90 PCT			100 PCT		
		THETA	ALPHA	LY	THETA	ALPHA	LY	THETA	ALPHA	LY	THETA	ALPHA	LY	THETA	ALPHA	LY	THETA	ALPHA	LY
JUN 22		-8.08	4.89	921.8	-8.08	4.37	901.8	-8.08	3.91	883.2	-8.08	3.50	866.2	-8.08	3.15	850.4	-8.08	3.15	850.4
JUN 1 JUL 12		-7.92	4.71	890.4	-7.92	4.20	871.0	-7.92	3.75	853.1	-7.92	3.36	836.7	-7.92	3.01	821.6	-7.92	3.01	821.6
MAY 18 JUL 27		-7.65	4.42	837.2	-7.65	3.93	818.9	-7.65	3.50	802.1	-7.65	3.12	786.8	-7.65	2.79	772.8	-7.65	2.79	772.8
MAY 3 AUG 10		-7.29	4.05	763.0	-7.29	3.58	746.1	-7.29	3.16	730.9	-7.29	2.80	717.1	-7.29	2.49	704.6	-7.29	2.49	704.6
APR 19 AUG 25		-6.89	3.61	672.5	-6.89	3.16	657.4	-6.89	2.77	644.0	-6.89	2.44	632.1	-6.89	2.14	621.4	-6.89	2.14	621.4
APR 4 SEP 9		-6.45	3.15	572.5	-6.45	2.73	559.5	-6.45	2.36	548.2	-6.45	2.04	538.3	-6.45	1.77	529.4	-6.45	1.77	529.4
MAR 21 SEP 23		-6.00	2.67	468.6	-6.00	2.27	457.7	-6.00	1.93	448.5	-6.00	1.63	440.6	-6.00	1.38	433.7	-6.00	1.38	433.7
MAR 7 OCT 8		-5.55	2.20	368.8	-5.55	1.82	360.0	-5.55	1.50	352.9	-5.55	1.23	346.9	-5.55	1.00	341.7	-5.55	1.00	341.7
FEB 20 OCT 22		-5.11	1.74	280.0	-5.11	1.38	273.2	-5.11	1.08	267.8	-5.11	.83	263.5	-5.11	.62	259.7	-5.11	.62	259.7
FEB 7 NOV 5		-4.71	1.30	206.7	-4.71	.97	201.5	-4.71	.69	197.6	-4.71	.46	194.5	-4.71	.28	192.0	-4.71	.28	192.0
JAN 23 NOV 19		-4.35	.92	152.3	-4.35	.61	148.4	-4.35	.36	145.6	-4.35	.15	143.4	-4.35	-.02	141.7	-4.35	-.02	141.7
JAN 10 DEC 3		-4.08	.64	117.2	-4.08	.34	114.1	-4.08	.10	111.9	-4.08	-.09	110.3	-4.08	-.25	109.1	-4.08	-.25	109.1
DEC 22		-3.92	.46	98.0	-3.92	.17	95.4	-3.92	-.05	93.6	-3.92	-.23	92.3	-3.92	-.38	91.3	-3.92	-.38	91.3
		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.		YEAR	R.I.	
		180.704	3.438		176.610	3.360		173.033	3.292		169.879	3.232		167.047	3.178				

NOTE - FOR ASPECTS WITH WEST COMPONENTS, THE TIME AND SIGN OF SR AND SS ARE REVERSED.

LATITUDE 50 N
ASPECT ESE - WSW

	10 PCT				20 PCT				SLOPE				30 PCT				40 PCT				50 PCT			
	THETA		ALPHA		THETA		ALPHA		THETA		ALPHA		THETA		ALPHA		THETA		ALPHA		THETA		ALPHA	
	SR	SS	LY	SS	SR	SS	LY	SS	SR	SS	LY	SS	SR	SS	LY	SS	SR	SS	LY	SS	SR	SS	LY	SS
JUN 22	-8.08	7.37	1021.9	-8.08	6.71	1020.6	-8.08	6.13	1017.0	-8.08	5.61	1011.0	-8.08	5.16	1002.7	-8.08	4.71	992.3	-8.08	4.26	982.9	4.81	973.5	4.36
JUN 1 JUL 12	-7.92	7.22	996.2	-7.92	6.58	997.3	-7.92	6.01	996.1	-7.92	5.51	992.3	-7.92	5.01	988.0	-7.92	4.51	983.6	-7.92	4.01	979.2	4.56	974.8	4.06
MAY 18 JUL 27	-7.65	6.98	951.8	-7.65	6.37	956.9	-7.65	5.82	959.4	-7.65	5.27	961.9	-7.65	4.72	964.4	-7.65	4.17	966.9	-7.65	3.62	969.4	4.17	973.9	3.62
MAY 3 AUG 10	-7.29	6.66	888.3	-7.29	6.08	898.3	-7.29	5.57	905.8	-7.29	5.07	913.3	-7.29	4.57	920.8	-7.29	4.07	928.3	-7.29	3.57	935.8	4.07	943.3	3.52
APR 19 AUG 25	-6.89	6.29	808.0	-6.89	5.75	823.5	-6.89	5.27	836.4	-6.89	4.79	849.3	-6.89	4.31	862.2	-6.89	3.83	875.1	-6.89	3.35	887.9	3.83	899.8	3.28
APR 4 SEP 9	-6.45	5.89	716.0	-6.45	5.39	736.8	-6.45	4.95	754.9	-6.45	4.51	773.0	-6.45	4.07	791.1	-6.45	3.63	809.2	-6.45	3.19	827.3	3.63	845.4	3.14
MAR 21 SEP 23	-6.00	5.48	616.2	-6.00	5.02	641.6	-6.00	4.62	664.2	-6.00	4.22	688.3	-6.00	3.82	712.4	-6.00	3.42	736.5	-6.00	3.02	760.6	3.42	784.7	2.97
MAR 7 OCT 8	-5.55	5.07	516.3	-5.55	4.64	545.0	-5.55	4.28	571.0	-5.55	3.97	593.6	-5.55	3.67	616.2	-5.55	3.37	641.8	-5.55	3.07	667.0	3.67	692.1	3.12
FEB 20 OCT 22	-5.11	4.67	423.2	-5.11	4.28	453.9	-5.11	3.96	482.0	-5.11	3.66	510.1	-5.11	3.36	538.2	-5.11	3.06	566.3	-5.11	2.76	594.4	3.36	622.5	2.91
FEB 7 NOV 5	-4.71	4.29	342.4	-4.71	3.95	373.9	-4.71	3.66	402.8	-4.71	3.37	433.3	-4.71	3.08	463.8	-4.71	2.79	494.3	-4.71	2.50	524.8	2.79	555.3	2.41
JAN 23 NOV 19	-4.35	3.97	279.3	-4.35	3.66	310.6	-4.35	3.41	339.5	-4.35	3.12	368.8	-4.35	2.83	398.1	-4.35	2.54	427.4	-4.35	2.25	456.7	2.54	485.9	2.16
JAN 10 DEC 3	-4.08	3.73	236.4	-4.08	3.45	267.1	-4.08	3.22	295.5	-4.08	2.93	324.8	-4.08	2.64	354.1	-4.08	2.35	383.4	-4.08	2.06	412.7	2.35	441.9	1.97
DEC 22	-3.92	3.59	212.0	-3.92	3.32	242.2	-3.92	3.11	270.1	-3.92	2.93	295.1	-3.92	2.74	323.0	-3.92	2.55	350.9	-3.92	2.36	378.8	2.55	406.7	2.17
JUN 22	-8.08	4.78	992.5	-8.08	4.44	980.7	-8.08	4.16	968.0	-8.08	3.91	954.8	-8.08	3.68	941.3	-8.08	3.45	927.8	-8.08	3.22	914.3	3.68	900.8	3.13
JUN 1 JUL 12	-7.92	4.70	977.7	-7.92	4.38	967.6	-7.92	4.10	956.5	-7.92	3.85	944.6	-7.92	3.64	932.5	-7.92	3.42	920.4	-7.92	3.20	908.3	3.64	896.2	3.11
MAY 18 JUL 27	-7.65	4.57	951.0	-7.65	4.26	943.8	-7.65	3.99	935.1	-7.65	3.76	925.5	-7.65	3.56	915.2	-7.65	3.35	904.9	-7.65	3.14	894.6	3.56	884.3	3.05
MAY 3 AUG 10	-7.29	4.40	910.6	-7.29	4.11	907.0	-7.29	3.86	901.7	-7.29	3.64	895.0	-7.29	3.45	887.4	-7.29	3.26	880.7	-7.29	3.07	874.0	3.45	867.3	2.98
APR 19 AUG 25	-6.89	4.19	855.8	-6.89	3.92	856.5	-6.89	3.69	854.9	-6.89	3.49	851.6	-6.89	3.32	847.1	-6.89	3.15	842.8	-6.89	2.98	838.5	3.32	834.2	2.89
APR 4 SEP 9	-6.45	3.96	788.7	-6.45	3.72	793.5	-6.45	3.51	795.7	-6.45	3.33	795.9	-6.45	3.17	794.5	-6.45	3.02	792.9	-6.45	2.87	791.3	3.17	790.5	2.92
MAR 21 SEP 23	-6.00	3.73	710.7	-6.00	3.51	719.2	-6.00	3.33	724.9	-6.00	3.17	728.3	-6.00	3.02	729.9	-6.00	2.87	731.5	-6.00	2.72	733.1	3.02	734.7	2.87
MAR 7 OCT 8	-5.55	3.49	624.4	-5.55	3.30	638.9	-5.55	3.14	647.5	-5.55	3.00	653.6	-5.55	2.88	657.7	-5.55	2.73	662.8	-5.55	2.59	667.9	2.88	673.0	2.74
FEB 20 OCT 22	-5.11	3.26	544.8	-5.11	3.10	558.6	-5.11	2.96	569.2	-5.11	2.84	577.3	-5.11	2.73	583.4	-5.11	2.60	589.5	-5.11	2.49	595.6	2.73	601.7	2.44
FEB 7 NOV 5	-4.71	3.06	468.8	-4.71	2.92	483.8	-4.71	2.80	495.8	-4.71	2.69	505.2	-4.71	2.59	512.5	-4.71	2.49	520.0	-4.71	2.39	527.5	2.69	535.0	2.34
JAN 23 NOV 19	-4.35	2.88	406.2	-4.35	2.76	421.7	-4.35	2.66	434.3	-4.35	2.57	444.4	-4.35	2.48	452.5	-4.35	2.40	460.6	-4.35	2.31	468.7	2.48	476.8	2.26
JAN 10 DEC 3	-4.08	2.75	361.6	-4.08	2.65	377.2	-4.08	2.56	390.0	-4.08	2.48	400.3	-4.08	2.41	408.7	-4.08	2.33	418.0	-4.08	2.25	427.3	2.41	436.6	2.20
DEC 22	-3.92	2.67	335.3	-3.92	2.58	350.8	-3.92	2.49	363.6	-3.92	2.43	374.0	-3.92	2.36	382.5	-3.92	2.30	393.0	-3.92	2.23	403.5	2.36	414.0	2.18

NOTE - FOR ASPECTS WITH WEST COMPONENTS, THE TIME AND SIGN OF SR AND SS ARE REVERSED.

LATITUDE 50 N
ASPECT E-W

	SLOPE										SLOPE										SLOPE																														
	10 PCT					20 PCT					30 PCT					40 PCT					50 PCT					60 PCT					70 PCT					80 PCT					90 PCT					100 PCT					
	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY	THETA	ALPHA	SR	SS	LY											
JUN 22	-8.08	7.46	1018.7	-8.08	6.82	1012.8	-8.08	6.20	1004.3	-8.08	5.61	994.1	-8.08	5.08	982.7	-8.08	4.53	973.4	-8.08	4.00	964.1	-8.08	3.47	954.8	-8.08	2.94	945.5	-8.08	2.41	936.2	-8.08	1.88	926.9	-8.08	1.35	917.6	-8.08	0.82	908.3	-8.08	0.29	899.0	-8.08	-0.24	889.7	-8.08	-0.71	880.4			
JUN 1 JUL 12	-7.92	7.30	990.9	-7.92	6.67	985.6	-7.92	6.05	978.1	-7.92	5.48	968.9	-7.92	4.96	958.6	-7.92	4.43	949.3	-7.92	3.90	940.0	-7.92	3.37	930.7	-7.92	2.84	921.4	-7.92	2.31	912.1	-7.92	1.78	902.8	-7.92	1.25	893.5	-7.92	0.72	884.2	-7.92	0.19	874.9	-7.92	-0.34	865.6	-7.92	-0.81	856.3			
MAY 18 JUL 27	-7.65	7.04	943.2	-7.65	6.42	939.0	-7.65	5.82	932.8	-7.65	5.26	925.4	-7.65	4.74	918.0	-7.65	4.21	910.7	-7.65	3.68	903.4	-7.65	3.15	896.1	-7.65	2.62	888.8	-7.65	2.09	881.5	-7.65	1.56	874.2	-7.65	1.03	866.9	-7.65	0.50	859.6	-7.65	-0.03	852.3	-7.65	-0.50	845.0	-7.65	-0.97	837.7			
MAY 3 AUG 10	-7.29	6.69	875.3	-7.29	6.08	872.4	-7.29	5.50	868.2	-7.29	4.97	863.0	-7.29	4.44	857.8	-7.29	3.91	852.6	-7.29	3.38	847.4	-7.29	2.85	842.2	-7.29	2.32	837.0	-7.29	1.79	831.8	-7.29	1.26	826.6	-7.29	0.73	821.4	-7.29	0.20	816.2	-7.29	-0.33	811.0	-7.29	-0.80	805.8	-7.29	-1.27	800.6			
APR 19 AUG 25	-6.89	6.29	790.3	-6.89	5.69	788.9	-6.89	5.13	786.9	-6.89	4.62	784.2	-6.89	4.10	781.5	-6.89	3.57	778.8	-6.89	3.04	776.1	-6.89	2.51	773.4	-6.89	1.98	770.7	-6.89	1.45	768.0	-6.89	0.92	765.3	-6.89	0.39	762.6	-6.89	-0.14	759.9	-6.89	-0.61	757.2	-6.89	-1.08	754.5	-6.89	-1.55	751.8			
APR 4 SEP 9	-6.45	5.85	693.7	-6.45	5.28	693.9	-6.45	4.74	694.1	-6.45	4.26	693.9	-6.45	3.73	693.7	-6.45	3.20	693.5	-6.45	2.67	693.3	-6.45	2.14	693.1	-6.45	1.61	692.9	-6.45	1.08	692.7	-6.45	0.55	692.5	-6.45	0.02	692.3	-6.45	-0.51	692.1	-6.45	-0.98	691.9	-6.45	-1.45	691.7	-6.45	-1.92	691.5			
MAR 21 SEP 23	-6.00	5.41	590.1	-6.00	4.85	591.7	-6.00	4.33	593.9	-6.00	3.87	596.0	-6.00	3.40	598.1	-6.00	2.93	600.2	-6.00	2.46	602.3	-6.00	1.99	604.4	-6.00	1.52	606.5	-6.00	1.05	608.6	-6.00	0.58	610.7	-6.00	0.11	612.8	-6.00	-0.36	614.9	-6.00	-0.83	617.0	-6.00	-1.30	619.1	-6.00	-1.77	621.2			
MAR 7 OCT 8	-5.55	4.97	487.4	-5.55	4.42	490.2	-5.55	3.92	494.0	-5.55	3.49	497.9	-5.55	3.02	501.6	-5.55	2.59	505.4	-5.55	2.16	509.2	-5.55	1.73	513.0	-5.55	1.30	516.8	-5.55	0.87	520.6	-5.55	0.44	524.4	-5.55	0.01	528.2	-5.55	-0.42	532.0	-5.55	-0.89	535.8	-5.55	-1.36	539.6	-5.55	-1.83	543.4			
FEB 20 OCT 22	-5.11	4.53	392.7	-5.11	4.00	396.4	-5.11	3.53	401.3	-5.11	3.12	406.6	-5.11	2.71	411.6	-5.11	2.30	416.9	-5.11	1.89	422.2	-5.11	1.48	427.5	-5.11	1.07	432.8	-5.11	0.66	438.1	-5.11	0.25	443.4	-5.11	-0.16	448.7	-5.11	-0.57	454.0	-5.11	-0.98	459.6	-5.11	-1.39	465.2	-5.11	-1.80	470.8			
FEB 7 NOV 5	-4.71	4.13	311.4	-4.71	3.61	315.6	-4.71	3.16	321.2	-4.71	2.78	327.3	-4.71	2.40	333.2	-4.71	2.02	339.3	-4.71	1.64	345.4	-4.71	1.26	351.5	-4.71	0.88	357.6	-4.71	0.50	363.7	-4.71	0.12	369.8	-4.71	-0.26	375.9	-4.71	-0.67	382.0	-4.71	-1.08	388.1	-4.71	-1.49	394.2	-4.71	-1.90	400.3			
JAN 23 NOV 19	-4.35	3.78	248.6	-4.35	3.28	253.1	-4.35	2.86	259.1	-4.35	2.49	265.5	-4.35	2.11	271.7	-4.35	1.73	277.9	-4.35	1.35	284.1	-4.35	0.97	290.3	-4.35	0.59	296.5	-4.35	0.21	302.7	-4.35	-0.17	308.9	-4.35	-0.59	315.1	-4.35	-0.97	321.3	-4.35	-1.35	327.5	-4.35	-1.73	333.7	-4.35	-2.11	340.0			
JAN 10 DEC 3	-4.08	3.52	206.3	-4.08	3.03	210.9	-4.08	2.61	216.9	-4.08	2.27	223.4	-4.08	1.89	229.7	-4.08	1.51	235.9	-4.08	1.13	242.2	-4.08	0.75	248.5	-4.08	0.37	254.8	-4.08	0.00	261.1	-4.08	-0.38	267.4	-4.08	-0.76	273.7	-4.08	-1.14	280.0	-4.08	-1.52	286.3	-4.08	-1.90	292.6	-4.08	-2.28	298.9			
DEC 22	-3.92	3.36	182.5	-3.92	2.87	187.0	-3.92	2.46	193.0	-3.92	2.13	199.5	-3.92	1.75	205.7	-3.92	1.37	212.0	-3.92	0.99	218.5	-3.92	0.61	225.0	-3.92	0.23	231.5	-3.92	-0.15	238.0	-3.92	-0.53	244.5	-3.92	-0.91	251.0	-3.92	-1.29	257.5	-3.92	-1.67	264.0	-3.92	-2.05	270.5	-3.92	-2.43	277.0			
JUN 22	-8.08	4.62	970.6	-8.08	4.20	958.1	-8.08	3.85	945.4	-8.08	3.54	932.8	-8.08	3.27	920.4	-8.08	2.97	908.0	-8.08	2.67	895.6	-8.08	2.37	883.2	-8.08	2.07	870.8	-8.08	1.77	858.4	-8.08	1.47	846.0	-8.08	1.17	833.6	-8.08	0.87	821.2	-8.08	0.57	808.8	-8.08	0.27	796.4	-8.08	-0.03	784.0	-8.08	-0.33	771.6
JUN 1 JUL 12	-7.92	4.50	947.6	-7.92	4.10	936.1	-7.92	3.75	924.3	-7.92	3.45	912.7	-7.92	3.15	901.1	-7.92	2.85	889.5	-7.92	2.55	887.9	-7.92	2.25	876.3	-7.92	1.95	864.7	-7.92	1.65	853.1	-7.92	1.35	841.5	-7.92	1.05	829.9	-7.92	0.75	818.3	-7.92	0.45	806.7	-7.92	0.15	795.1	-7.92	-0.15	783.5			
MAY 18 JUL 27	-7.65	4.32	907.6	-7.65	3.93	897.8	-7.65	3.60	887.7	-7.65	3.31	877.5	-7.65	3.01	867.3	-7.65	2.71	857.1	-7.65	2.41	846.9	-7.65	2.11	836.7	-7.65	1.81	826.5	-7.65	1.51	816.3	-7.65	1.21	806.1	-7.65	0.91	795.9	-7.65	0.61	785.7	-7.65	0.31	775.5	-7.65	-0.29	765.3						
MAY 3 AUG 10	-7.29	4.07	850.0	-7.29	3.70	842.4	-7.29	3.39	834.4	-7.29	3.11	826.2	-7.29	2.81	818.0	-7.29	2.51	809.8	-7.29	2.21	801.6	-7.29	1.91	793.4	-7.29	1.61	785.2	-7.29	1.31	777.0	-7.29	1.01	768.8	-7.29	0.71	760.6	-7.29	0.41	752.4	-7.29	0.11	744.2	-7.29	-0.19	736.0	-7.29	-0.49	727.8			
APR 19 AUG 25	-6.89	3.78	776.5	-6.89	3.43	771.5	-6.89	3.14	765.9	-6.89	2.88	759.9	-6.89	2.63	753.9	-6.89	2.37	747.9	-6.89	2.12	741.9	-6.89	1.86	735.9	-6.89	1.61	729.9	-6.89	1.35	723.9	-6.89	1.10	717.9	-6.89	0.84	711.9	-6.89	0.58	705.9	-6.89	0.32	699.9	-6.89	0.06	693.9	-6.89	-0.20	687.9			
APR 4 SEP 9	-6.45	3.46	691.5	-6.45	3.14	689.1	-6.45	2.87	686.0	-6.45	2.63	682.3	-6.45	2.37	678.6	-6.45	2.13	674.9	-6.45	1.88	671.2	-6.45	1.63	667.5	-6.45	1.38	663.8	-6.45	1.13	660.1	-6.45	0.88	656.4	-6.45	0.63	652.7	-6.45	0.38	649.0	-6.45	0.13	645.3	-6.45	-0.12	641.6	-6.45	-0.37	637.9			
MAR 21 SEP 23	-6.00	3.13	598.5	-6.00	2.84	598.5	-6.00	2.58	597.6	-6.00	2.37	596.0	-6.00	2.18	593.9	-6.00	1.97	592.3	-6.00	1.76	590.7	-6.00	1.55	589.1	-6.00	1.34	587.5	-6.00	1.13	585.9	-6.00	0.92	584.3	-6.00	0.71	582.7	-6.00	0.50	581.1	-6.00	0.29	579.5	-6.00	0.08	577.9	-6.00	-0.13	576.3			
MAR 7 OCT 8	-5.55	2.80	504.4	-5.55	2.53	506.4	-5.55	2.30	507.4	-5.55	2.11	507.6	-5.55	1.94	507.2	-5.55	1.77	506.8	-5.55	1.59	506.4	-5.55	1.42	506.0	-5.55	1.25	505.6	-5.55	1.08	505.2	-5.55	0.91	504.8	-5.55	0.74	504.4	-5.55	0.57	504.0	-5.55	0.40	503.6	-5.55	0.23	503.2	-5.55	0.06	502.8			
FEB 20 OCT 22	-5.11	2.49	415.9	-5.11	2.24	419.3	-5.11	2.03	421.7	-5.11	1.86	423.3	-5.11	1.71	424.1	-5.11	1.56	424.9	-5.11	1.41	425.7	-5.11	1.26	426.5	-5.11	1.11	427.3	-5.11	0.96	428.1	-5.11	0.81	428.9	-5.11	0.66	429.7	-5.11	0.51	430.5	-5.11	0.36	431.3	-5.11	0.21	432.1	-5.11	0.06	432.9			
FEB 7 NOV 5	-4.71	2.19	398.3	-4.71	1.97	342.6	-4.71	1.78	345.9	-4.71	1.63	348.4	-4.71	1.49	350.1	-4.71	1.35	351.8	-4.71	1.21	353.5	-4.71	1.07	355.2	-4.71	0.93	356.9	-4.71	0.79	358.6	-4.71	0.65	360.3	-4.71	0.51	362.0	-4.71	0.37	363.7	-4.71	0.23	365.4	-4.71	0.09	367.1	-4.71	-0.05	368.8			
JAN 23 NOV 19	-4.35	1.94	277.2	-4.35	1.74	281.9	-4.35	1.57	285.7	-4.35	1.43	288.6	-4.35	1.31	290.9	-4.35	1.19	293.2	-4.35	1.07	295.5	-4.35	0.95	297.8	-4.35	0.83	300.1	-4.35	0.71	302.4	-4.35	0.59	304.7	-4.35	0.47	307.0	-4.35	0.35	309.3	-4.35	0.23	311.6	-4.35	0.1							

Frank, Ernest C., and Lee, Richard
1966. Potential solar beam irradiation on slopes. U. S. Forest
Serv. Res. Paper RM-18, 116 pp., illus. Rocky Mountain
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True solar time of sunrise and sunset and daily integrated potential insolation are presented in a series of tables for surfaces from latitudes 30° to 50° north, by 2° increments; at aspects from 0 to 360°, by 22.5° increments; on slopes from 0 to 100 percent, by 10-percent increments; and for 13 solar declinations or 24 dates during the year. Total potential insolation for a year and a radiation index based on annual values are given for each latitude, aspect, and slope combination. For inclined surfaces, latitude and change in longitude necessary to locate "equivalent" horizontal surface are tabulated. Introductory notes present the mathematical equations upon which the tabulated values are based and describe the determination of local sunrise-sunset times and the use of the tables for latitudes 30° to 50° south.

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